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CHICAGO

ITS NATURAL ADVANTAGES AS AN INDUSTRIAL AND COMMERCIAL CENTER AND MARKET

By

GEORGE E. PLUMBE, A. B., LL. D.

Statistician The Chicago Association of Commerce

Published by

THE CIVIC-INDUSTRIAL COMMITTEE OF THE CHICAGO ASSOCIATION OF COMMERCE

CHICAGO, ILLINOIS

1910

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APOLOGETIC

THIS volume is a collection of facts. Its purpose is not, in any sense, to "boom Chicago." It aims simply to give the natural causes that have made Chicago what it has already become, and these causes, being still existent, to indicate what the future of the city is destined to be.

The growth of the city has no parallel in history, nor has the rapidity of its industrial development been equaled in all Christendom.

Being the focal point in the Mississippi Valley, an empire blessed with a larger variety and greater abundance of natural resources than any similar area on earth, has fixed unalterably the destiny of Chicago as its metropolis.

Its past is not only history; it is prophesy.

G. E. P.

I.

CHICAGO, ITS LOCATION AND GROWTH

There is nothing anomalous in the fact that in every civilized country on the globe, Chicago, as a city, is regarded as the marvel of the century. That a municipality not yet 75 years of age should have outstripped in growth of population; in the massiveness and solidity of its commercial buildings; in the extent and variety of its industrial development; in the number and stability of its financial institutions; in the magnitude and high standing of its schools, colleges and universities; in the matchless reach of its railway facilities; in the importance of its trade and commerce; in the beauty and extent of its parks and boulevards; in the abundance of every natural product that makes living a comfort and delight and in the resolute and energetic character of its inhabitants —that Chicago should have accomplished all of this, and, within the life time of many of its citizens, become the fourth in size of the world's civilized cities, surpassing many of those that have been, for centuries, the commercial and financial centers of the world's trade, industries and wealth—this makes Chicago the marvel of all the ages.

And yet Chicago is only in its infancy—its greatness is beyond the power of anticipation.

There was no chance or fortunate circumstance that determined the location of a great city at the southern extremity of Lake Michigan. The power that created the chain of the Great Lakes and made the Mississippi Valley, covering the vast expanse of territory between the Allegheny and Rocky Mountains, with 16,000 miles of navigable internal water courses, designated the center of that region as the site of a great metropolis. The location of the city was one that no person of reasonable judgment would have selected for such an occupancy. With bluff shores along the Lake for miles north of the city, Chicago was placed in a sedgy marsh the chief products of which were chills and fevers, avoided even by the nomadic bands of Pottowattomies who pitched their tepees on the elevation west of the mouth of the estuary that is now the Chicago River.

The French voyagers, Joliet, LaSalle and Marquette, 236 years ago read the prophecy which time has later verified, and each year since their day the necessity for a metropolis where Chicago now stands has been emphasized. Chicago is the product of necessity having for its basis the needs of a developing continent. In response to that exigency Chicago has grown in spite of obstacles and calamities such as no city on the globe has been forced to contend against.

The voluntary movement of the people has been invariably governed by natural laws. They have moved from East to West and very closely along the isothermal lines of their places of nativity. The tide of emigration has been retarded here and deflected there, as the result of easily discovered causes, but the advance of people in their evolution towards civilization has been towards the setting sun. The trend of population in the United States for one and a half centuries has closely followed these laws of racial movements.

In 1790, when the first census of the United States was taken, the center of population was a point twenty-three miles east of Baltimore. With each succeeding enumeration this point has moved westerly at the average rate of forty-eight miles each decade until the last census when it was six miles southeast of Columbus, Indiana. Thus, in a century, the center of population has moved westerly 519 miles, deviating only some thirty miles south of a due east and west course, and reached a point about 80 miles east and about 200 miles south, of Chicago. The completion of the Erie Canal, for the 387 miles between Buffalo and Troy, in 1826 very greatly stimulated the western movement of an agrarian population from the rugged hills of New England and Pennsylvania to the fertile prairies of Illinois; the movement naturally taking the waterways as presenting the course of least resistance. This concourse was made up of English, Celts and Teutons, with a sprinkling of Scandinavians, which made the best material in the world out of which to form a state or municipal government.

The crops grown on these prairies demanded an outlet to the Atlantic Seaboard, the only possible market for the products of the west and the only section from which the sturdy settlers could procure the fabrics, wares and provisions which they were unable to produce at home. Chicago, then a collection of scattered cabins with a few hundred inhabitants, was the only point for delivery and receiving for both sections of the country these necessaries of life.

Up to about 1854 the Mississippi was the barrier against farther western movement of the people and during the twenty preceding years Northern Illinois had become well settled with the most energetic, thrifty and intelligent yeomanry that ever gave character and vigor to a state. But the increasing demands of a busy people could not long remain satisfied with the ox cart as a means of transportation to and from their only market and the Illinois and Michigan Canal, from Chicago to Peru, was built at a cost of $6,507,681 and opened for traffic April 10th, 1848. As to the value of this canal Mr. Brainerd, Canal Commissioner of the State, reported, in 1885, that during the 37 years that it had then been in operation it had saved the people of Illinois $180,000,000 in freight charges alone.

Moses Kirkland in his "History of Chicago," page 119, says: "At the beginning of that year (1848) Chicago had neither railroads nor canal nor any other means of communication with the outer world than by wheeled vehicles and vessels on Lake Michigan. . . . It could boast of no sewers nor were there any sidewalks except a few planks here and there, nor paved streets. The streets were merely graded to the middle, like country roads, and in bad weather were impassable. A mud hole deeper than usual would be marked by signboards with the significant notice thereon, 'No bottom here, the shortest road to China.' There was no gas and water continued to be supplied from carts by the bucketful. There were no omnibuses, cabs, nor horse cars, nor cars of any kind, much less telegraph and telephones. Wabash Avenue, between Adams and Jackson Streets was regarded as out of town, where wolves were occasionally seen prowling about."

The era of railroad construction in the West immediately followed, the Galena and Chicago Union Railroad being opened to Elgin in

January, 1850; to Belvidere, December 3rd, 1852, and to Freeport in 1853. The Chicago and Burlington Railroad was opened to Burlington, Iowa, in 1855, and to Quincy, Ill., in 1856. The first road to enter Chicago from the East was the Lake Shore & Michigan Southern in February, 1852, and the Michigan Central Railroad in May of the same year. Next came the Chicago, Rock Island & Pacific, which was completed to Joliet in 1853 and to Rock Island in 1854. In rapid succession came the Chicago & Alton, the Chicago & Milwaukee, and the Pittsburg, Ft. Wayne & Chicago.

The manufacturing industries in Chicago in 1848 were still in their infancy and the value of the entire product in 1850 was returned at $3,562,583 on an invested capital of $1,086,025. During the next six years the value had expanded to $15,513,063 on a capital of $7,759,400, while the number of employes increased from 2,081 to 10,573. The panic of 1857 was disastrous to Chicago and no improvement was shown until 1860, when under the stimulus of the war the growth was phenomenal.

In 1906 the industrial development of Chicago had so enlarged that the establishments numbered 8,159, capitalized at $637,743,474; employing 241,984 wage earners who received in wages $136,404,696, and turned out as finished product goods valued at $955,036,277. The wage earners in Chicago's industrial plants in 1905 exceeded the total population of either Jersey City, N. J.; Louisville, Ky.; Indianapolis, Ind.; St. Paul, Minn.; Providence, R. I., or Rochester, N. Y. If we add to this the number of those engaged in the various trades—carpenters, masons, blacksmiths and the like—clerks in public and private offices and stores, railroad employes and the vast army of day and common laborers, some idea may be acquired of the present industrial activity of this city.

The following table shows the growth of the city in population. In 1823 Chicago is described as "a Village in Pike County containing 12 or 15 houses and about 60 or 75 inhabitants." The first government census was taken in 1840, which gives the earliest official data as to population.

1835*	3,297	1880	503,185
1840	4,470	1890	1,099,850
1850	29,963	1900	1,689,575
1860	109,260	1909	**2,572,835
1870	298,977		

*State Census.
**Estimated.

II.

CHICAGO, ITS CLIMATE AND HEALTH

Climate is one of the determinating factors which directs and controls commerce, because of its relation to public health and mortality. Climate and weather are by no means synonymous terms. Climate "is the combined average result of varied conditions of atmosphere as regards temperature and moisture," while weather denotes "the purely local and temporary conditions of temperature and moisture at any given place and time."

Both trade and commerce always will, as they always have, follow lines of equable temperature. Isotherms, or lines drawn across the continent through places having the same average temperature, vary greatly with different seasons of the year. For instance, a line drawn through places having a winter, or January, mean temperature of 40 degrees, passes along the Alaskan coast, through the southern section of British Columbia, entering the United States near Medicine Hat, and is deflected so as to pass through Lake Superior, Georgian Bay and Montreal to the Gulf of the St. Lawrence. The line of 50 degrees, or average annual mean temperature,—the line of equable temperature—starts at Puget Sound, is deflected by the Cascade Mountain and Sierra Nevada ranges, which turn the warm currents of the Pacific to the south; passes through New Mexico south of Santa Fe; takes a sharp turn around the southerly end of the Sierra Nevada range to the north, nearly to Denver, thence east through Omaha, Davenport, La Salle (just south of Chicago) to Toledo; thence almost due east, reaching the coast midway between New York and New Haven; thence to the British Isles, across France and Germany to Northern Japan. This is the line of equable temperature, where extremes are less frequent, rain fall ample, and where all kinds of industry can be carried on with least disturbance from climatic influences.

It is the line along which the leading markets of the world are located. It is also the region where the death rate is lowest, where pestilence is less frequent and where the soil gives the greatest variety of products. In the United States all the area having a population of from 45 to 90 per square mile is located along this line and east of the 95th parallel of longitude, while west of that parallel that density is attained only in isolated and small spots, like the vicinity of Portland, Oregon, and San Francisco, California, with a small area at Denver, Colorado.

Most of the manufacturing in the United States is carried on in the northern half of the section east of the 90th parallel, and north of the 37th degree of north latitude, which is due chiefly to larger population, great variety of food products grown, the profusion of raw materials and uniform fertility of soil, with adequate rain fall and an equable temperature. South of that line industrial enterprise has been principally confined to the manufacture of home grown products, like sugar, from the sugar cane, turpentine, lumber and semi-tropical fruits and vegetables, until in recent years, the people of that section have, with

Victoria
Tacoma
Seattle
Spokane
Portland
Walla Walla
Lewiston
Wallace
Kalispell
Missoula
Helena
Butte City
Yellowstone Park
Miles City
Sheridan
Lander
Cheyenne
Denver
Pueblo
Leadville
Durango
Santa Fe
Roswell
Amarillo
Abilene
Fort Worth
Palestine
Oklahoma
Dodge City
Concordia
Topeka
Wichita
Kansas City
Springfield
Fort Smith
Little Rock
Shreveport
Vicksburg
Jackson
Meridian
Montgomery
Thomasville
Memphis
Birmingham
Annision
Atlanta
Augusta
Macon
Savannah
Charleston
Wilmington
Raleigh
Norfolk
Richmond
Petersburg
Lynchburg
Knoxville
Asheville
Chattanooga
Nashville
Columbia
Lexington
Louisville
Evansville
Cairo
St. Louis
Springfield
Hannibal
Kookuk
Keokuk
Des Moines
Council Bluffs
Omaha
Lincoln
Grand Island
North Platte
Valentine
Rapid City
Pierre
Yankton
Sioux City
Huron
Bismarck
Ellendale
Devils Lake
Minneapolis
St. Paul
Duluth
Moorhead
Winnipeg
Portage la Prairie
Brandon
Qu'Appelle
Swift Current
Medicine Hat
Calgary
Banff
Kamloops
Port Arthur
Fort William
Escanaba
Marquette
Green Bay
La Crosse
Milwaukee
Madison
Dubuque
Chicago
La Salle
Peoria
Springfield
Indianapolis
Terre Haute
Evansville
Cincinnati
Columbus
Sandusky
Toledo
Detroit
Grand Rapids
Grand Haven
Port Huron
Saginaw
Sault Ste. Marie
Parry Sound
White River
Rockliffe
Montreal
Quebec
Ottawa
Kingston
Toronto
Hamilton
Niagara Falls
Buffalo
Rochester
Syracuse
Oswego
Albany
Utica
Scranton
Binghamton
Elmira
Corning
Hornellsville
Cleveland
Youngstown
Pittsburg
Altoona
Harrisburg
Philadelphia
Baltimore
Washington
New York
Hartford
Boston
Providence
Portland
Burlington
Montpelier
Concord
Newport
Cape May
Atlantic City
Cape Henry
Lake Henry
Father Point
Chatham
Grindstone
Anticosti
Gaspé
Prince Albert
Battleford
Prince Rupert
Victoria
Vancouver
Port Simpson
Metlakahtla
Sitka
Kamloops
Barkerville
Ashcroft
Clinton
Lytton
Yale
Kamloops
Revelstoke
Donald
Golden
Fort Steele
Kootenay
Wardner
Nelson
Rossland
Grand Forks
Greenwood
Midway
Penticton
Okanagan
Kelowna
Vernon
Enderby
Salmon Arm
Shuswap
Kamloops
Ashcroft
Clinton
Lytton
Yale
Port Moody
Vancouver
Victoria
Nanaimo
Comox
Alert Bay
Port Simpson
Metlakahtla
Sitka
Fort Wrangel
Juneau
Dyea
Skagway
Glenora
Telegraph Creek
Dease Lake
Atlin
Caribou
Quesnelle
Soda Creek
Barkerville

great profit, encouraged the spinning and weaving of cotton fabrics and the working of their coal and iron mines. Industrial enterprises have otherwise very generally remained stationary while in the north they have moved westward and increased with the population. For instance, a few years ago more than one-half of the implements used in agriculture in the United States, were made in New York and Ohio, but the movement of population to the West and the resultant growth of agricultural development therein, have carried this industry with such progress that today nearly one-half of the farming implements used in the entire country are made in the state of Illinois. They can be made cheaper here than in the east and the saving in transportation to meet the demand nearer the center of population is an important item in establishing the price to the consumer for such machinery and implements.

Another influence that has stimulated the growth of manufacturing in the West is the natural tendency of European immigration to come to this section on landing in the country. Men are governed in their migrations by exactly the same laws that control the distribution of plants, and rarely is either found far north or south of the climatic zone in which they originated. Hence the colonists from northern Europe have come directly west. The Swedes, Norwegians, Germans, English, Scotch, Irish, and all the like have settled in the north Mississippi Valley rather than at the south. This natural movement has been encouraged by the fact that the ports of entry for commerce between the United States and Europe were along the North Atlantic Coast. The inlets upon which these ports were located, between Maine and Virginia, and particularly in Massachusetts, New York, Delaware and Chesapeake Bays, being the best harbors and nearest to foreign markets, controlled not only the movements of goods and merchandise of various kinds, but also the transit of passengers between the two continents. This has given the West the best, most vigorous and laborious foreign population, which came to America for homes, and has accomplished a vast deal in accelerating the industrial growth of the West.

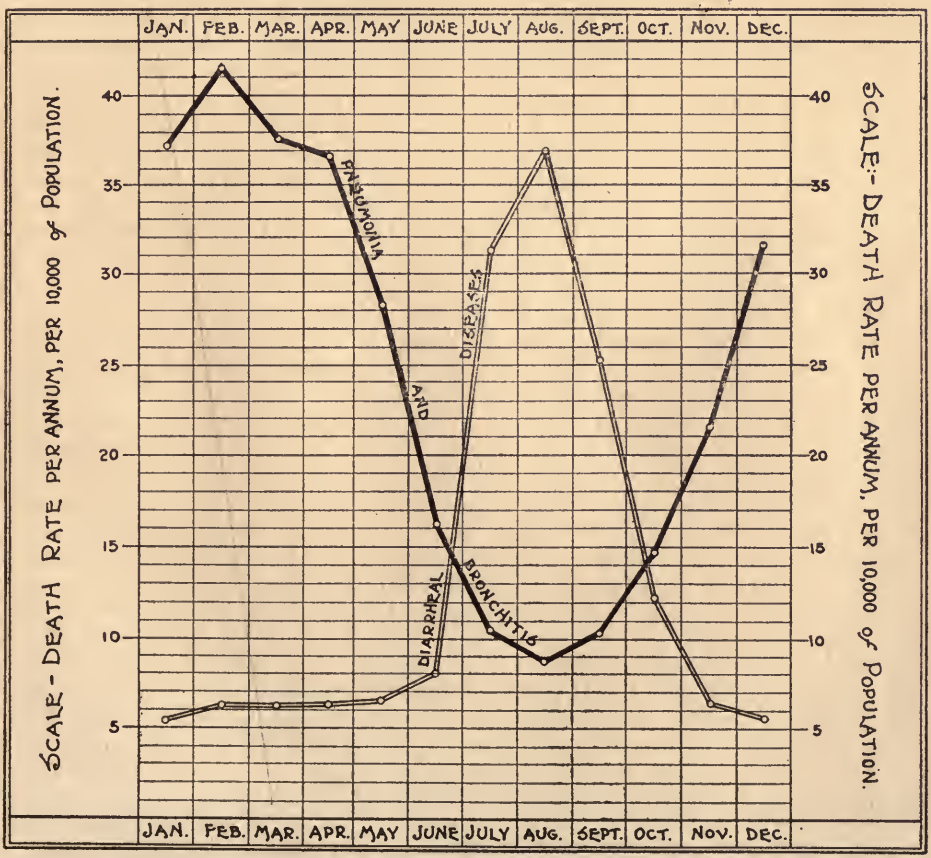
Dr. Arthur Mitchell, of Scotland, has made a study of the effect of climate and temperature upon public health, but his conclusions are applicable with more certitude to the densely populated portions of Europe than to the Middle West. He says: "Considering the weather of the year as made up of several distinct climates, differing from each other according to temperature and moisture and their relations to each other, it may be divided into six distinct climates, characterized respectively by cold, cold and dryness, dryness with heat, heat, heat with moisture, and cold with moisture. The mortality from all causes and in all ages shows a large excess above the average from the middle of November to the middle of April, from which it falls to the minimum in the end of May; then it slowly rises, and, on the third week in July it suddenly shoots up to almost as high as the winter maximum of the year, at which it remains till the second week in August, falling thence as rapidly as it rose, to a second minimum in October."

From his investigations of European conditions, Dr. Mitchell holds that "Cold and moist weather is accompanied with a high death rate from rheumatism, heart diseases, diphtheria and measles; cold weather,

MONTHLY DEATH RATES OF TWO DISEASES THAT ARE INDIRECTLY AFFECTED BY WEATHER CONDITIONS

IMPURE AIR DISEASES—Pneumonia and Bronchitis—HIGH in Winter when people house themselves up and breathe the foul air of unventilated rooms. LOW in Summer when people keep their doors and windows open; when people live more in the open air.

IMPURE FOOD DISEASES— Diarrheal Diseases—HIGH in hot weather chiefly because heat spoils; or flies, dust, etc., contaminate the food we eat — ESPECIALLY BABY'S FOOD.



BY COURTESY OF DR. W. A. EVANS, COMMISSIONER OF HEALTH, CHICAGO.

with a high death rate from bronchitis and pneumonia; cold and dry weather, with a high death rate from brain diseases, whooping cough, convulsions; warm and dry weather with a high death rate from suicide and small-pox; hot weather with a high death rate from bowel complaints; and warm moist weather with a high death rate from scarlet and typhoid fevers."

These conclusions cannot be considered as applicable, especially in the Middle West, except in a very general way. Regarding local conditions Dr. C. St. Clair Drake, of the Chicago Department of Health, says "From our available statistical tabulations of deaths and meteorologic data it would be unsafe to make any positive statements along the lines of Dr. Mitchell's observations. In a general way, however, we would say that the indirect effects of hot and cold weather are much more important factors in the death rate than the direct effects. For instance, the impure-air diseases, pneumonia, bronchitis, tuberculosis and influenza, are much more active in cold weather than in warm weather—not directly caused by the cold, but rather indirectly, by reason of people shutting themselves up in their houses and work-places, sacrificing necessary ventilation to the maintenance of a comfortable temperature. The breathing of vitiated air means the lowering of one's disease-resisting powers. The practice of breathing bad air is much more general in winter than at any other season of the year, therefore our physical conditions are then the lowest and the death rates from air-borne diseases are then the highest.

"Then, in hot weather, the diarrhoeal diseases kill more people, chiefly babies, than any other cause of death—not directly, but indirectly through the effects of the heat upon the babies' food. Aside from these two important groups of disease we have made no extended studies of the relationship between the prevalence of certain diseases and meteorologic conditions."

There are local conditions in Chicago that contribute in a very marked degree to the salubrity of the city by modifying its extremes of temperature in both the summer and winter months. Immediately east of the city is Lake Michigan, having an area of 22,450 square miles, on the shore of which the city is located. This immense body of water is without current except as the flow of the water is influenced by the winds. In the summer the warm breezes are tempered in their passage over the cooler waters of the lake and the local temperature is thus so modified that a day with the mercury above 90 degrees is a rarity. During the fall months the waters of the lake give to the atmosphere the heat that they have absorbed during the summer months which affords the city a long and warm autumn, a degree of temperature much like the Indian Summer of New England, which frequently continues until the latter part of December. Cold and blustering days will intervene between October and Christmas but rarely for more than two or three in succession. This shortens the period of physical disorders, of which rheumatism and bronchitis are types and which are peculiar to the autumnal and winter months of some other sections of the country. At this season of the year the rain falls are minimum, the precipitation for the last 38 years showing that most rain falls in the months of May, June, July and August and the least in

October, November, December and February, the average for the year being 33.70 inches, which is by no means excessive. This condition keeps the air cool in summer and dry in winter. To this local modification of the climate is due the fact that while at some manufacturing centers, in such industries as develop high degrees of heat, like furnaces and foundries, labor has frequently to be for a time suspended during the heated term, yet it is never necessary to do so in this city. It is never too warm in this city to carry on any kind of labor.

It is only natural that under such conditions the death rate of Chicago should be lower than in any of the large cities of this country, if not in the world, and such is the fact.

The following table shows the death rate per 1,000 of population of American cities that had 350,000 or more inhabitants, for five years between 1904 and 1908, as computed by the U. S. Census Bureau:

City.	Death Rate Per 1,000.
New York	18.58
Chicago	14.22
Philadelphia	18.38
St. Louis	16.30
Boston	18.79
Baltimore	19.47
Pittsburg	19.07
Cleveland	15.30
Buffalo	16.25
Detroit	15.69
Cincinnati	19.57

Chicago is often made the "butt" of a bit of pleasantry because of its claims to being an ideal "Summer Resort," and yet no such title is demanded that is not based on the facts as shown by the report of the Government Weather Bureau of this city. The following table shows the maximums and minimums of temperature for the last 38 years from which it appears that only once in that time has the thermometer registered over 100 degrees and only in six winters has it made a record below zero.

The following table shows the extremes of temperature for the thirty-eight years between 1871 and 1909 both inclusive:

Month.	Maximum.	Year.	Day.	Minimum.	Year.	Day.	Highest monthly mean.	Year.	Lowest monthly mean.	Year.
January	65	1876b	1	—20	1897‡	25	39.8	1880	12.0	1893
February	63	1880*	26	—21	1899	9	39.0	1882	14.6	1875
March	80	18951	29	—12	1873	4	45.2	1878	28.9	1877
April	88	1899	29	17	1875§	17	53.4	1896	38.8	1874
May	94	1895	31	27	1875	2	65.5	1896	51.6	1907
June	98	1872	19	40	1894t	6	71.4	1894	61.2	1903
July	103	1901	21	50	1873¶	19	77.4	1901	67.0	1891
August	98	1874†	11	47	1887	26	76.3	1900	67.6	1890
September	98	1899	5	32	1899	30	76.6	1908	59.8	1888
October	87	1897	15	14	1887	25	61.4	1900	46.2	1895
November	75	1888	1	— 2	1872	29	48.5	1909	31.6	1880j
December	68	1875	31	—23	1872	24	43.4	1877	18.4	1872

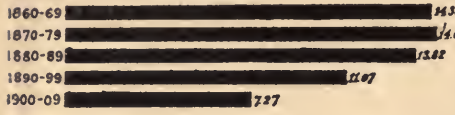
* Also in 1876, 10th day. † Also in 1881, 4th day; 1887, 10th day; 1896, 8th day.
‡ Also in 1875, 9th day. § Also in 1881, 1st day; 1879, 3rd day. t Also in 1875, 22d day. ¶ Also in 1895, 9th day. j Also in 1872. l Also in 1907, 23rd day.
b Also in 1909, 23rd day.

WHAT SANITATION AND PREVENTIVE MEDICINE HAVE DONE FOR CHICAGO

REDUCTION IN DEATHS FROM

THE PREVENTABLE DISEASES.

Death Rates Per 1000 of Population.
By Decades.



ALL DISEASES AND CAUSES.

Death Rates Per 1000 of Population.
By Decades.

DIAGRAM SHOWING DEATH RATES BY YEARS, 1860-1909.

ALL CAUSES
PREVENTABLE DISEASES

(Diseases included in group of "Preventable Diseases" shown below)

SCALE:- DEATH RATES PER 1000 OF POPULATION

DISEASES CLASSED AS PREVENTABLE.

Asiatic Cholera	Malarial Fevers	Smallpox
Diphtheria & Croup	Measles	Tuberculosis
Diarrheal Diseases	Pneumonia & Bronchitis	Typhoid Fever
Erysipelas	Puerperal Fever	Typhus Fever
Influenza	Scarlet Fever	Whooping Cough

BY COURTESY OF DR. W. A. EVANS. COMMISSIONER OF HEALTH. CHICAGO.

In no year, during the last 38, has the average mean temperature of Chicago been above 50 degrees nor below 45 degrees, while the rain fall in no year has exceeded 43.22 inches nor been less than 26.14 inches. If there is a city on the continent that has a more equable temperature or uniform precipitation its name and location are unknown. These local conditions are due primarily to the breezes from Lake Michigan which are moderated in the summer by their passage over the cooler waters of the lake, and softened in the winter by the warmth accumulated by the water during the summer months.

Take in connection with these facts the others, showing the time and quantity of precipitation of rain fall, and it can be understood why Chicago holds its high rank, not only as a manufacturing center, but as the most salubrious city in which to live.

The subject of public health is one that is of vital importance, not only to the manufacturer, who seeks a healthful climate in which to reside with his family, but also to him as an employer of labor. Epidemics are practically unknown, and while other cities are waging a constant warfare against zymotic disorders, occasioned by contaminated water and evaporation from unsewered soil, Chicago's exemption, by reason of millions of dollars expended for sewerage and to secure pure water for domestic purposes in the conservation of public health, is something of which the city is proud and of which it has reason to be boastful.

Children will contract measles, mumps and other ailments to which they are specially subject, but the closing of any one of our public schools on account of the prevalence of such outbreaks is almost unknown.

An employer of labor who is practically exempt from sickness among his employes has an asset in business that is of great value even if it does not have an entry on the credit side of his ledger. When the shops of other cities are closed because of epidemics from any cause, it is a source of great satisfaction to the business man of Chicago that he is uniformly exempt from such misfortunes and is located in the healthiest large market on the globe.

III.

CHICAGO, AS A CENTRAL MARKET

The center of the area of the United States, excluding Alaska, Hawaii and other recent accessions to its domain, is in northern Kansas in approximate latitude 39° 55′ and approximate longitude 98° 50′ a little west of Beloit in Mitchell County. The center of population was in 1900 near Columbus, Bartholomew County, Indiana. The center of population is, therefore, approximately 1,000 miles east of the center of area, with Chicago located nearly midway between the geographical and industrial centers of the country although a little north of an east and west line connecting the two.

The location of markets is fixed by the inexorable laws of trade and commerce and these are determined by movements of population, the development of agriculture and the industrial growth of the territory. In the early history of the country, when its population was confined to a narrow fringe along the Atlantic seaboard, Philadelphia was the principal market of the entire country from Savannah to Boston. The development of manufacturing in the New England States was a magnet strong enough to attract trade in that direction, northerly, and New York early became the larger market. The maritime advantages of New York over Philadelphia made the former city the center of the Coastwise trade of the new nation.

New York soon became the financial center of the country and the southern cotton grower bought his goods where he sold his staples. The one branch of business greatly assisted in the growth of the other.

With the development and prosperity of the West the idea of going 1,000 miles to a market was not to be thought of and local interests, while they did not change the direction of commerce, did demand a market nearer home where commodities could be exchanged for the products of the soil.

There are several factors that fix the locus of a general market, the more important being, proximity to raw materials, favorable climate, population, financial resources, availability of power, abundance of labor and accessibility. Population furnishes the consumers and producers; products of labor supply the commodities to be bought and sold; financial resources provide the medium of exchange between seller and buyer and accessibility enables both the buyer and seller to reach the market and the producer to place the results of his industry where they can be inspected and offered for sale. In proportion as these essentials are dominant the market will be great or small.

The expansion of population in this country implies, of itself, a greater and stronger degree of concentration in population which means, also, contraction within a smaller compass of manufacturing and this is a fundamental in determining the modern markets of the world. This must be the case, invariably, because increase of population and concentration of industries always stimulates the enlargement of factories; the introduction of more complicated and costly machinery; improved facilities in handling and transporting manufactured products, all of

which tend to lessen the cost of manufacturing. This attracts general attention which encourages trade and the location of a permanent market.

This condition is still further potent in its effect upon the market. As the market grows there is a demand for more complicated machinery, more highly skilled labor and a wider range of manufactured goods.

This is exactly the condition of things that materially built up the great market of Chicago as is clearly attested today. Take the manufacture of iron and steel. With the demand of a rapidly growing population at the West came the imperative call for the construction of railways. The blast furnaces made steel from which Bessemer steel rails were rolled, the Bessemer plants gave way to the open hearth process which turned out a better variety of steel. Then the car wheel industry located its works near the smelters and, as steel was demanded for structural purposes, that industry became common and steel bridge works followed.

But it is not necessary to trace the evolutions of the steel industry down to nuts and bolts, wire nails and horse shoes in order to further illustrate how from natural causes a great market has its inception and growth.

The fact must not be overlooked that a manufacturing center and market cannot be located otherwise than in a metropolis. The assembling of raw materials for the use of industrial plants demands not only the convenience of lines of transportation for their conveyance but also the great volume of labor required for their manipulation and the capital necessary for the carrying on of the various branches of business involved. The greater the variety of industrial enterprises, the greater must be the concentration of the three essentials, above mentioned.

Another very important factor that enters into the question of locating industries and the creation of market facilities is the creation and distribution of the necessary power for the propelling of machinery. This feature of growth has been very radically changed within the last decade, by the progress of invention that has made commercially available sources of power that were previously merely speculative. This has been chiefly the adaptation of electricity to the propulsion of machinery and in probably no other direction has greater progress been made in the useful arts within the last twelve or fifteen years, than by the employment of electric currents for the motive power of mills, factories and other industrial enterprises.

For many years water power was the only energy applicable to the movement of machinery and the streams of the New England, and other eastern sections of the country, were, on that account, the great sources of manufacturing progress and wealth in that section of the country. Then steam power, in a great measure, supplanted the water wheel and manufacturing enterprises were established in localities separated from running streams. Later electricity was made still more available as a propelling power and, since, the invention of appliances by which electric power can be transmitted without appreciable loss for hundreds of miles, it has added greatly to the value of limited water powers, which were formerly of little value, because of their capacity for the operation of electric generators. Electricity, as an instrument

of commerce, has another, and perhaps not secondary, value in that it centralizes means for the conveyance of intelligence, which is especially important in conducting and dispatching the business of a great market. These are the telegraph and the telephone. By the telephone nearly every farmer of any state can be advised daily of the exact condition of the market in which he sells his products. This regulates the movement of produce and stocks in such a way that a glut is prevented and receipts are regulated, conducing to a steady market and regulating the supply to the demand.

It is a singular fact that climate is one of the strong influences that effects the location of a great market, none of importance being located south of 30 or north of 50 degrees of north latitude, only one being north of the northern limit, which is due entirely to the warm currents of the Gulf Streams which modify the climate of England. This is because labor is most effective and productive, rain fall is more uniform, the soil is more fertile and products more varied in that zone than in any other north of the Equator. The natural tendency is thus to preserve the equilibrium between supply and demand whether it be of labor or food. A glance at the map of the world shows the tendency of centralization in the world's markets. In the middle ages, when the most valuable commerce was between eastern Asia and Europe, Genoa and Venice were the world's principal markets.

But as the movement of trade tended northward, Flanders and Holland became its center, and Rotterdam and Antwerp controlled the trade of Europe. The next movement of commerce was northwest and London and Liverpool became the dominant commercial and financial centers of the continent. On our own continent the movement of commerce has been more modern but the laws governing it are no less inviolable than in Europe.

The improvement of our waterways cannot nullify the laws which govern commerce and trade but will accelerate their operation. The great markets of the world are located along the waterways and if there is an increase in the capacity or utility of these avenues of trade it will only enhance the importance and encourage the development of the great markets to which they are tributary and which they will serve.

What do the promises of history mean, or indicate, in their application to Chicago?

No large city in the United States is situated so near to both the center of area and population as is Chicago. It is estimated that within a night's ride of Chicago there is a population of more than 40,000,000 people, or nearly one-half of the entire inhabitants of the country. They are a highly cultivated, energetic, prosperous people who possess nearly one-third of the wealth of the country and produce a very large proportion of the food products of the United States. Over the railroads, connecting them immediately with Chicago, are operated more than 1,500 railway passenger trains daily, all of which enter the various railway stations located within the business district of the city. The territory within this radius reaches from Omaha in the West to Pittsburg in the East and from Minneapolis and St. Paul in the North to Nashville in the South, and contains more than 20 large cities, with smaller markets, all of which are tributary to the Great Central Market of Chicago. All

merchandise is, more or less, sensitive to freight charges and cost of conveyance is an important factor in the maintenance of a market. Business interests demand that goods be purchased where they can be bought the cheapest and freight charges are included by the retailer in the cost of his stock. He will therefore buy in the market nearest him, other conditions being equal. The unequaled transportation facilities of Chicago have been discussed in another chapter of this volume and it is only necessary to recall that subject to show why the wholesale trade of this city is increasing with such marvelous rapidity. The following tables, from *Dun's Review* of January 8, 1910, a recognized authority, show the growth of the wholesale trade and manufacturing of Chicago since 1901:

Year.	Wholesale Trade.	Increase.
1901	1,142,120,000	
1902	1,298,200,000	156,080,000
1903	1,442,437,000	144,237,000
1904	1,550,270,000	107,833,000
1905	1,767,304,000	217,034,000
1906	1,855,600,000	88,296,000
1907	1,911,268,000	55,668,000
1908	1,825,263,000	*86,005,000
1909	1,916,526,150	96,623,150

*Decrease result of panic of preceding year.

Industrial development indicates both the growth and importance of a great market. The following table shows the increase in the manufactured product each year since 1901.

Year.	Manufactured Product.	Increase.
1901	1,086,248,000	
1902	1,195,460,000	109,176,000
1903	1,226,901,000	31,441,000
1904	1,280,000,000	53,099,000
1905	1,420,800,000	140,800,000
1906	1,491,840,000	71,040,000
1907	1,525,000,000	34,160,000
1908	1,410,625,000	*14,375,000
1909	1,495,262,500	84,637,500

*This decrease was caused by the business depression which began in the autumn of 1907 and which had a restrictive influence on manufacturing generally throughout the entire country, as well as in Chicago.

There is no disputing the fact that "Chicago is the Live Stock Market of the World," a position it has held for many years. Other markets have been established which do a large business, like Omaha, Kansas City, Sioux City, but Chicago is the more important. The following is a statement of the receipts and valuations at the Union Stock Yards during the year 1909:

Head.	Kind.	Valuation.
2,929,805	Cattle	$172,569,337
409,714	Calves	4,246,720
6,619,018	Hogs	107,838,452
4,441,424	Sheep	23,432,034
91,411	Horses	15,521,000
14,491,372	Total	$323,521,543

The transportation of this stock required 252,712 cars. The total shipments of stock from Chicago was: Cattle, 1,267,679; calves, 29,576; hogs, 1,663,993; sheep, 940,321; horses, 75,976; (total, 3,977,545) requiring 83,617 cars.

During the forty-four years since the Union Stock Yards were established the total receipts of stock of all kinds have been 448,531,819 head, valued at $8,225,183,564. There are few cities in the world the total business of which has exceeded that of this single branch of Chicago's trade and commerce.

The general and healthy growth of manufacturing in Chicago for a series of years is a better indication of the development of industrial enterprises than can be shown by the progress of a single year, large as it may be. Between 1880 and 1905 the increase in manufacturing in the United States was 175%, but during that period the gain in Illinois was 239% and in Chicago it was 300%.

The following table shows the extent of various commercial transactions along different lines for the year 1909, showing the extent of increase or decrease over preceding year:

	Total.	Increase.
Live stock sales	323,638,400	10,802,400
Grain and flour received, bu.	272,620,165	*7,792,318
Railroad earnings	$453,802,644	$29,688,022
Lake traffic, tons	15,360,597	1,068,927
Real estate sales	$140,908,512	$7,582,882
New buildings	$90,175,300	$27,248,080
New business buildings	$22,630,650	$5,165,300
Bank clearings	$13,781,843,612	$1,928,028,669

*Decrease.

This decrease is due solely to the falling off in the export of wheat. The increase of wheat production has not kept pace with the demands upon the wheat fields, increment of population having created an increased requirement for flour for domestic consumption and this is exhibited in the falling off of the quantity exported.

Bank clearances are regarded as a very safe indication of the amount of business transacted in any of the markets of the country. The following table shows the bank clearances for the 12 months of 1909 and 1908, with the percentage of increase in each of the cities estimated in the census bulletin of 1906 to contain a population of 300,000 or over:

	1909.	1908.	Inc.
New York	$103,588,738,321	$79,275,880,256	30.7%
Chicago	13,781,843,612	11,853,814,943	16.3%
Philadelphia	7,021,756,889	5,937,754,106	18.3%
St. Louis	3,442,439,002	3,074,806,759	11.9%
Boston	8,440,382,263	7,338,035,825	15.0%
Baltimore	1,469,673,172	1,240,904,390	18.4%
Pittsburg	2,361,076,457	2,064,632,960	14.4%
Cleveland	876,716,091	749,846,710	16.9%
Buffalo	467,876,993	409,086,607	14.4%
San Francisco (not reported)			
Detroit	767,738,122	668,047,524	14.9%
Cincinnati	1,348,031,450	1,230,180,300	9.6%
Milwaukee	602,880,450	547,569,295	10.1%
New Orleans	904,231,769	786,067,353	15.0%
Washington	294,586,203	278,976,213	5.6%

A still closer indication of business progress is shown in the postal statistics of the same cities in 1908 and 1909. The receipts indicate the growth in population and the money orders show the increase in business that rarely goes through the banks. The gain in receipts of the Chicago office for the year shows, if compared with the total receipts of some of the offices included in the list, about how large a city Chicago is adding to itself each year. In its money order business Chicago outranks every other city in the United States.

Postoffice.	Receipts 1909.	Gain over 1908.	Domestic Money Orders 1909. Amount Issued.	Amount Paid.
New York	$19,926,339	$1,356,800	$11,662,782	$41,541,400
Chicago	15,735,140	1,136,058	9,850,897	73,260,275
Philadelphia	6,154,176	231,574	4,255,212	9,416,681
St. Louis	4,143,114	260,702	2,533,597	8,619,997
Boston	5,747,988	395,812	5,674,052	11,507,043
Baltimore	1,980,142	118,389	1,534,501	2,535,463
Pittsburg	2,134,117	116,694	1,615,460	5,349,065
Cleveland	2,057,847	104,822	1,294,945	3,336,085
Buffalo	1,750,145	231,866	1,610,036	11,688,941
San Francisco	2,095,376	232,524	4,745,900	9,337,059
Detroit	1,777,236	145,718	1,685,077	4,470,406
Cincinnati	2,212,666	58,078	1,111,635	4,179,085
Milwaukee	1,439,933	98,262	1,240,328	3,136,483
New Orleans	909,664	3,924	820,546	3,208,596
Washington	1,337,630	38,423	2,181,639	2,122,612

IV.

CHICAGO, ITS TRANSPORTATION FACILITIES

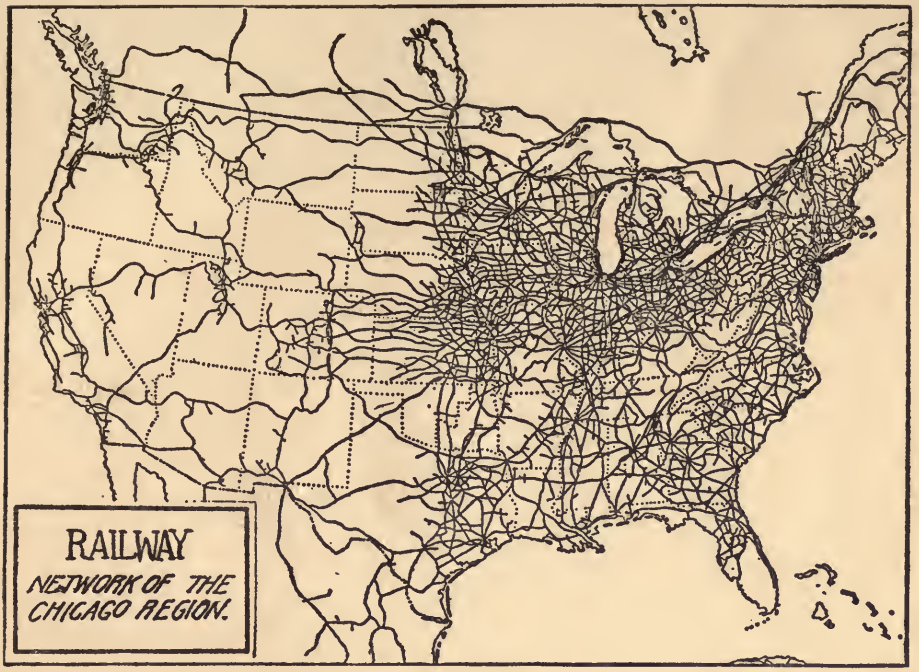
It was said by Lord Bacon that "there are three things which make a nation great and prosperous; a fertile soil, busy workshops, and easy transportation for men and goods from place to place," and to the wisdom of this broad and terse declaration the world's history does not furnish an isolated exception. Indeed the greatness and prosperity of a nation is indicated by the size and wealth of its industrial centers and places of traffic, towards which all lines for the conveyance of goods and persons naturally converge.

Within the last quarter of a century the industrial character of the United States has been very greatly modified. We had from the beginning been an agricultural people but within the time specified manufacturing has divided the honors with our industrial population. The manufacturing center of the country, based upon the gross valuation of manufactured products, has moved to the west with less rapidity than has the center of population and has pursued a course considerably north of that taken by immigration. In 1890 the industrial center of the country was seven or eight miles southwest of Canton, Ohio. In the next decade it had moved west about 75 miles to a point three miles south of Loudonville in that state. If it has not changed its course or the rapidity of its advance it is now in the vicinity of Marion, Ohio, but the indications are that it will be located north rather than south of that place.

Theoretically the industrial growth of a country is governed by the location of its natural resources and its natural lines of transportation.

The volume of the agricultural products of the territory adjacent to Chicago, and the natural outlet for them by way of the Great Lakes, created the necessity for a city of supplies at the southern extremity of Lake Michigan. The opening of the Erie Canal in 1826, was the only requisite necessary to insure the large and rapid growth of Chicago, and to that waterway Chicago is chiefly indebted for its present position. But it required seven days to reach the Atlantic Seaboard and besides there remained a period each year of practically three months when this route was blocked by ice. Fortunately the era of railroad construction began, but Chicago had already assumed a commercial importance that made her the objective point for railway lines either east or west. The East demanded the wheat and corn from the prairies of Illinois and Iowa, and the West required the products of the Eastern mills, factories and forges and willingly "paid the freight" both ways as she has done ever since and is doing today. It was not the railroads that made Chicago, although they were important factors in its growth, but it was rather Chicago that made the railroads, the great trunk lines they have in later years become.

The great impetus in railroad building dates from about 1846 at which time there were 4,930 miles of road in operation, most of them being in the New England and Middle States. We have now in operation in the United States practically 230,000 miles of railroad of which



FROM REPORT OF CHICAGO HARBOR COMMISSION.

about 43 per cent, or 96,000 miles, have terminals in the City of Chicago. This mileage is divided among 26 different trunk lines, not including four belt, or switching roads, or electric lines, some of the latter doing both a passenger and freight business. Five of the 26 trunk lines are in themselves really railway systems, with various branches reaching remote points of the country. These five big systems have a mileage respectively of 7,622 miles, 8,875 miles, 7,938 miles, 4,622 miles and 8,720 miles, or a total of 37,532 miles. These roads having Chicago terminals reach every section of the United States. One or more through freight and passenger trains leave Chicago daily for the following cities: Portland, Ore.; Seattle, San Francisco, Los Angeles, El Paso, Galveston, New Orleans, Jacksonville, Baltimore, Philadelphia, New York, Boston, Portland, Me.; Quebec, Montreal, Duluth, Winnipeg, and intermediate points.

There is no city on the earth that has so vast a range of territory with which it is brought into daily contact as Chicago and, when the distribution of its manufactories and commercial establishments are concerned, no other center can reach so large a number of both consumers and producers as can the City of Chicago.

Another large feature of this situation is that no railroad or railway system runs a train *through* this city—all trains stop here, and are made up here for the journey or shipments beyond. Chicago is the absolute terminal of every railroad train that enters it. This gives Chicago shipping facilities that have no equal anywhere in the world.

This explains why it is that the industrial zone of Chicago is growing with such unexampled rapidity, and why it is that in the two years between January, 1908, and January, 1910, more than $200,000,000 was expended within that area, either in the erection of new industrial plants, or in the enlargement of existing establishments to meet the requirements of the demands upon their various activities.

Significant as this array of facts may be they by no means tell the whole story of Chicago's transportation advantages over every other industrial zone. They leave out of the calculation entirely the commerce of the Great Lakes on which Chicago is a port of prime importance.

The tonnage of the port of Chicago for 1909 was as follows: Arrivals, 6,294; tonnage, 7,783,710; clearances, 6,091; tonnage, 7,738,547; arrivals and clearances, 12,385; total tonnage, 15,521,257. The tonnage of the port of Chicago exceeds the combined foreign tonnage of Boston, Philadelphia, Baltimore and Charleston. The receipts by lake were: Hard coal, 780,501 tons; soft coal, 501,780 tons; iron ore, 4,479,042; lumber, M. feet, 337,437; wheat, bushels, 5,555,446. Principal shipments were: Flour, barrels, 296,906; wheat, bushels, 5,855,300; corn, bushels, 24,352,407; oats, bushels, 4,713,586; iron, tons, 208,470.

The movement in this city for the improvement of the river and harbor, which terminated in the creation of the Chicago Harbor Commission whose report has just been issued, will result in the quadrupling of the commerce of the river in the immediate future. The harbor has, within the last few years, lost some of its prestige owing to the fact that the improvement of the harbor has not kept pace with the very large increase in the size and capacity of vessels engaged in lake navigation. It was only recently that the average size of the lake freighters did not exceed 350 feet in length with a capacity of 4,500 to 5,000 tons, while at the present time there are more than 60 freighters on the lakes exceeding 600 feet in length with a carrying capacity of 18,000 tons, and the number of these vessels of maximum size is rapidly increasing.

The improvements of the harbor of Chicago, as contemplated will admit of the entry and departure of these large lake freighters.

Another public work in contemplation which will increase beyond calculation the transportation facilities of Chicago is the construction of the Lakes-to-Gulf Deep Waterway which will, beyond reasonable doubt, be completed within the near future. The public sentiment of the entire middle west is practically a unit for this improvement of our internal waterways. If the accepted plans for that work are carried out Chicago will be the center of a system of waterways extending from Pittsburg, Pa., to Fort Benton, Mont.,—a distance of 4,000 miles—and from St. Paul, Minn., to the Gulf of Mexico, very nearly an equal distance.

The internal commerce of this vast area is now estimated at $22,000,000,000 annually which would be fully doubled, as a result of the improvement of our internal waterways, which will be inaugurated as soon as bills now pending before Congress are placed upon the statute books of the government.

It is not necessary to speculate on the results to Chicago as a manufacturing center that will follow the completion of the Panama Canal.

Keen observers, like James J. Hill, are making large investments in preparation for that event. The trade of the Orient will mean to the Pacific Coast what European commerce has meant to the Atlantic seaboard, and Mr. Hill gives it as his conviction that "when the Pacific Coast states shall have a population of 20,000,000, as they will, then Chicago will be the largest city in the world."

V.

CHICAGO, ITS SUPPLY OF RAW MATERIALS

"Theoretically the prime factors of the industrial problem are raw materials, power, transportation, markets and labor, and no community can thrive as a manufacturing center which does not possess at least three of these factors." With its boundless resources of this character the West has not kept pace with the East in the development of its industries and this has been due largely to the conservative force of invested capital. The industrial development of the country began in New England. That section of the country was illy adapted to successful agriculture commensurate with its growing demands while it did possess abundant water power with a population accustomed to labor and admirably fitted to industrial pursuits. The southern Atlantic States with slave labor but without natural power for propelling of machinery, could supply the spindles of New England with cotton and these two conditions offered inducements for the founding of the infant textile industries of the New England states which were eagerly seized and put into active operation. New England grew rich and prosperous from the weaving of cotton fabrics for which there was no limit, so far as demand was concerned. The prosperity of the Western agricultural area was New England's opportunity.

The opening of the coal and iron ore fields of Pennsylvania furnished employment for the capital of the Middle States and the building of railways, east of the Alleghenies, kept Eastern capital so well employed at home as to place an embargo upon its investment in Western industrial pursuits.

For more than half a century the West was simply a tributary to the East and lavishly did it pour its gold—the products of the farms—into the Eastern markets. The building of railroads in the West was the first demand for the opening of Eastern money bags that met with anything like a favorable response. Western development grew in importance and magnitude. With such financial encouragement the commercial center of the country began its slow western movement which stimulated a surprising growth along industrial lines through the northern portion of the States of Ohio, Indiana and Illinois and southern Michigan. The increasing importance of Chicago naturally made her the center of this new movement. The conservative power of invested capital was broken and the West gave abundant promise that sooner or later it would become the nation's work shop.

It has been said that the demand for, and use of, iron is the best measure of a nation's prosperity, a declaration that has ample verification in the United States and especially in the West. The discovery in 1844 and the opening of the immense deposits of rich iron ore in the Vermilion, Gogebec, Menominee, Marquette and Mesabe ranges, within easy reach of Lake Superior, afforded new possibilities for manufacturing enterprises. These deposits all lie within a radius of from 350 to 900 miles of Chicago while to the south of the city are 40,000 square miles of the best deposits of bituminous coal on the continent.

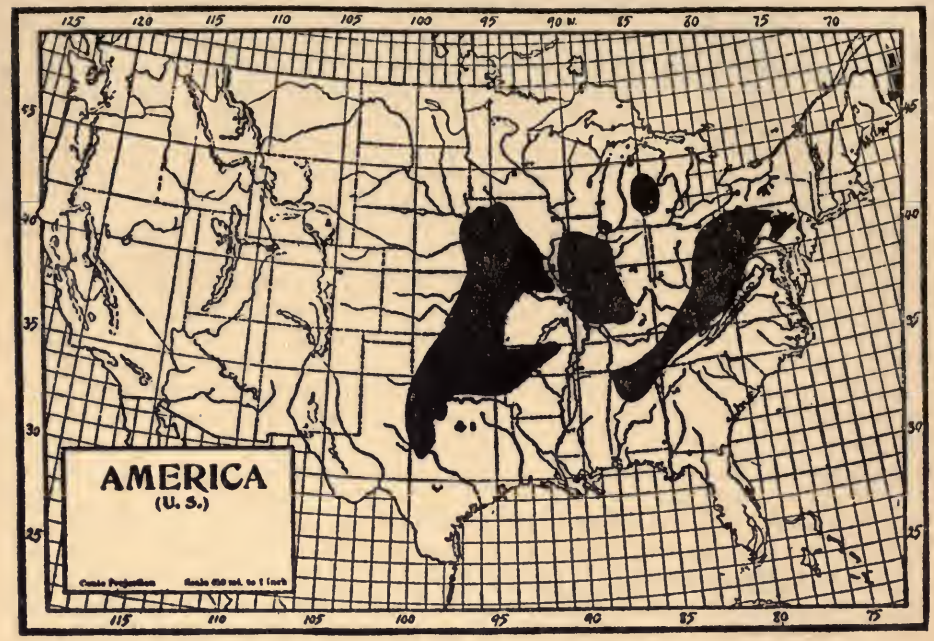
The production of iron ore in the Lake Superior region for the year 1909 was: Mesabe Range, 27,752,358 tons; the Menominee Range, 4,833,891 tons; the Gogebec Range, 3,834,285 tons; the Marquette Range, 3,823,558 tons, and the Vermilion Range, 1,439,583 tons; a total of 41,683,675 tons. The total product of iron ore in the United States for 1909 was 51,000,000 tons, of which the Lake Superior region produced four-fifths.

Following the discovery of this ore there was an effort to establish steel mills at the head of Lake Superior. There was an abundance of iron ore, coal in profusion could be had from Pennsylvania, and it was cheaper to ship the coal to the ore than the ore to the coal. But the effort failed. What was the difficulty? The first obstruction was the absence of a local market to create a demand for and the use of the product of the furnaces. That market was all at the East and what could be saved by not shipping the ore and manufacturing the iron at home was offset by the necessity of transporting the finished products to the East. Surrounding industrial plants are, almost invariably, a cordon of industries that draw their sustenance from the parent plant. About great iron industries there will grow up a collection of collateral interests such as factories for making machinery, large foundries and mills of various kinds using the pig iron for the manufacture of iron implements of all kinds from wire nails to steamship plates. The effort to establish iron furnaces near the ore beds utterly failed. Of this Lake Superior ore 6,678,538 tons was, in 1909, shipped to the manufacturing district of Chicago, where it was made into steel rails, structural and every other variety of mercantile iron which has found a ready and active market almost at the doors of the blast furnaces. Chicago has outdistanced all other sections of the country in the number and size of the new iron mills of various kinds now in progress of erection within its limits or contiguous thereto. The iron and steel interests have already outgrown Pittsburg, and the southern extremity of Lake Michigan has been selected for the future development of the industry. The completion of iron mills now in progress of construction at or near Chicago will result in an output of over 12,000,000 tons annually.

Next in importance to iron is coal—in fact without coal iron ore would be of little value. Illinois ranks second among the states in its output of bituminous coal, the product being about 55,000,000 tons annually, from a coal area of about 40,000 square miles and reaching from the Ohio river north to within 40 or 50 miles of the city limits. Illinois with Iowa, Indiana and Ohio mine in the aggregate considerably over 103,000,000 tons annually.

This coal, while of the very best quality, is valued at about $1.10 per ton at the mines. The coal, of which about 14,000,000 tons are consumed in Chicago annually, costs from $1.50 to $2.00 per ton delivered, depending on quality, cost of transportation, amount contracted for and some other minor charges. Notwithstanding the proximity of the western coal fields to Chicago there is considerable coal and coke used in this city, brought from Eastern mines and ovens.

Coke plays a very important part in the manufacture of iron and steel. Most of the coke used in Chicago is from the Eastern ovens, the product of the ovens here being about 430,000 tons annually, not



FROM HARBOR COMMISSION REPORT. COAL AREA OF THE UNITED STATES.

including the gas house returns. A new plant is in progress of erection which will add 1,650,000 tons annually to this output.

Copper is annually becoming of greater importance and value in the industrial progress of the entire country. The world's output in 1909 was 735,178 tons, of which the United States produced 543,647 tons, or over 72 per cent of the total. The states having the largest product in the order of volume are Montana, Arizona, Michigan, Utah and Nevada, which yield more than two-thirds of the total. Michigan is in close touch with Chicago by water, while each of the other copper producing areas are connected by rail with this city. Between four and five thousand tons of copper are received in Chicago annually, by Lake transportation, where it is manufactured into various articles of which copper and brass form an important feature.

The lead and zinc that comes to this market are from the Joplin district, comprised of portions of Missouri, Oklahoma and Kansas, the State of Illinois and the State of Wisconsin, all of which districts are directly tributary to Chicago. The product metal from these districts in 1909 was 890,251,625 pounds, as reported in the *Mining World* of this city, of which 99,168,683 pounds was lead and 172,493,612 pounds was zinc.

While Chicago has always been a large lumber market yet never before in its history have receipts reached such magnitude as during the year 1909, and it still remains the largest market in the United States. It is a great market not only because of the quantity of lumber handled here but because of the very large variety of woods that make

up the stock of the local yards. Purchases can be made of mahogany and other costly lumber from the tropics, cypress from the southern low lands and cedars from the forests on the Pacific Slope, with pine, spruce, walnut and other lumber products, both hard and soft, from northern forests.

According to the reports of the *American Lumberman* the total receipts for the year 1909 were 2,584,512,000 feet, an increase of 530,873,000 feet over 1908. The shipments aggregated 961,822,000 feet, most of it to Eastern points, the difference showing the domestic consumption. These facts explain why Chicago is the largest furniture market in the country, while for pianos, organs, carriages, and other industries demanding both fine and rough, or common lumber, it is not equaled on the continent.

The use of cement in the construction of large buildings, especially such as are used in most manufacturing structures, has become so universal as to give that material an importance equal to steel and lumber for all such construction purposes. Upon this subject Mr. E. S. Hanson, Editor of the *Cement Era,* says:

"Chicago is the logical marketing point for the cement production of three states—Illinois, Indiana and Michigan, which is something like 12,000,000 barrels annually, or about 25 per cent of the entire production of the country. It would be possible to concentrate a half million barrels of cement at any point in Chicago inside of forty-eight hours. In connection with the large amount of cement produced in the Chicago district, must also be taken into consideration the fact that many of the important manufacturers in other sections of the country have selling agencies in Chicago. This all means that Chicago controls the cement situation of the Middle West; in fact, it may be safely stated that, with its central location, its immense railroad advantages, as well as its facilities for water transportation, Chicago covers a wider field in the collection and distribution of cement than any other point. Chicago cement entered into the construction of the railway terminal building at Washington, and on the other hand it helped to construct some of the immense irrigation projects of the West and has assisted largely in the rebuilding of San Francisco. In this latter work, the immense possibilities of this market have been fully demonstrated. In time of normal construction, San Francisco would undoubtedly buy the larger part of its cement nearer home. At such a time as the city is now experiencing, however, such a course is out of the question and a practically inexhaustible market such as that supplied by Chicago has had to be drawn upon. The increase of Chicago's cement business for 1909 over its previous year is estimated at fully 25 per cent."

It is impossible in the space at command to give in detail the products classed as raw material which are consumed in industrial activities of this city. But we enumerate a few only of the more prominent that are the products of territory immediately tributary to Chicago. There are petroleum, salt, leather, cotton, wool, building stone, brick, marble, gravel, sand, lime, and some others of lesser importance. If any city, domestic or foreign, can claim a larger or richer endowment of natural wealth than Chicago it is entitled to supremacy.

VI.

CHICAGO, ITS LABOR SUPPLY

It is no more disastrous to the success of a manufacturing enterprise for the proprietor to locate his establishment in a place where the supply of the chief raw material he uses is limited to his bare necessities, than it is to select a situation where there is such an insufficiency of labor as to enable him to meet no more than his ordinary requirements. In either case a temporary, or permanent increase in the demand for his product so cripples him that he is unable to take advantage of the enlargement of his business or to compete with a manufacturer who, under more favorable conditions, is placing on the active market an article which may be inferior to his own.

There is no principle better settled in the distribution of population than that labor of all kinds, skilled as well as common, will gravitate to industrial centers and this is more pronounced when the laborers are of foreign birth than when they are native born citizens of the country. The foreigner comes here for no other purpose than to seek permanent employment at living wages while, as a very general rule, the native, after a few years, becomes an employer of labor himself, wins his way to a salaried position or is a skilled operative in his chosen occupation. The majority of foreign born working men are unskilled laborers and it is this class that fills the greater number of industrial plants in this country.

Thus it is that the basis of industrial progress is the cheap laborer who performs the patient, tireless and low paid drudgery which is in greatest demand, even in this era when complicated and automatic machinery is so largely depended upon in every department of industrial enterprise. In fact, it is this very kind of machinery that creates the large demand for unskilled labor and which attracts such to manufacturing centers.

Antedating the industrial activity, which is now characteristic of this city, Chicago was the great center to and from which agricultural products tended for distribution. Land was both cheap and enormously productive and the products of the soil met with a constant demand at remunerative prices. To this condition northern Illinois, Wisconsin, Iowa and Minnesota are indebted for the Swedish and Norwegian farmers who now form a very large proportion of their agricultural population. They were thrifty, intelligent and inured to a life of exacting labor. They had large families and were not compelled to depend upon hired labor in their business. Their prosperity became known in their former homes and they were followed by kinsmen and acquaintances, each new arrival adding to the necessity for, and growth of manufacturing centers and these, in turn, emphasized the requirement for skilled and common labor in the shops and mills. This vast population, remaining unassimilated, and serving always as a magnet to draw still others of their race from their mother country, and who retained the manners, customs and habits of their native lands, has given the West, and especially its cities, the most cosmopolitan population to be found anywhere on the globe. There are in these states townships today

where the English language is spoken neither in the home, stores, schools or churches, and yet those necessities of modern civilization are of the very best.

Immigation from Sweden, Norway and Germany has declined somewhat in late years, as has also that from the United Kingdom and France but the influx has been largely increased from Italy, Russia and Hungary. There has, however, been a steady decline in the total of immigration since 1907, when it reached the highest point, 1,285,349, to 1909 when it had fallen to 751,786. The tendency of foreign immigration is now to the cities, and it is generally of persons not skilled in any of the useful arts or domestic agriculture, and of such labor, Chicago has an inexhaustible supply. At the last census (1900) Chicago had a foreign born population of 587,112, and the nationalities which are most commonly associated with the severe toil of unskilled daily labor are the Italians, Bohemians, Poles and Russians.

These are the foreigners who are practically never assimilated with other populations, native or alien born. They have no knowledge of our language, laws, customs or modes of life. They live in communities each by themselves, and probably 75 per cent of the adult males are laborers with pick and shovel, in lumber yards or doing the heavy labor about mills and manufactories. But on the other hand, they are the best unskilled laborers to be found anywhere. They are robust, live cheaply, dress poorly, occupy small cottages or apartments in localities where rent is low and they toil for a wage that no American would consider and which most foreigners would refuse. With this great laboring population, numbering approximately 600,000 people, which thoroughly understands every class of employment for which they offer themselves, the manufacturer has an army of common laborers from which to draw for all the unskilled labor he may require.

But hard as the life of these toilers may seem to an American, from his point of view, they are vastly better off, and have more of the comforts of life here than they ever had or could have at home. As compared with other cities, Chicago has few crowded tenement quarters and the laboring man here has, as a rule, more of home life and its comforts than can be found in other large cities. While we have our crowded spots, the laborer has more room, more light and better air than is usually possessed by people of his class elsewhere.

The cottages occupied by these laborers are small but the lots upon which they stand are large enough to give the tenant, or owner, space for a good sized garden in the rear, as well as a bit of lawn in front, and it is not at all uncommon to see a very productive kitchen garden connected with these homes which produces a very considerable quantity of food for the family. Rents vary from $4.00 to $8.00 a month for apartments, in the sections of the city occupied by these working men, and few pay either more or less. From a report made by the City Homes Association "of a canvass of 420 apartments in a West Side district of the city, it appears only one Italian family was found paying more than $10.00 a month rent and only 26 families paying less than $4.00. The average rent paid by the Italians was a little under $5.00 a month for three-room apartments. The Jewish laborers paid a little

more than $8.00 a month rent, the Poles $5.66 and the Bohemians $5.93 a month for four rooms."

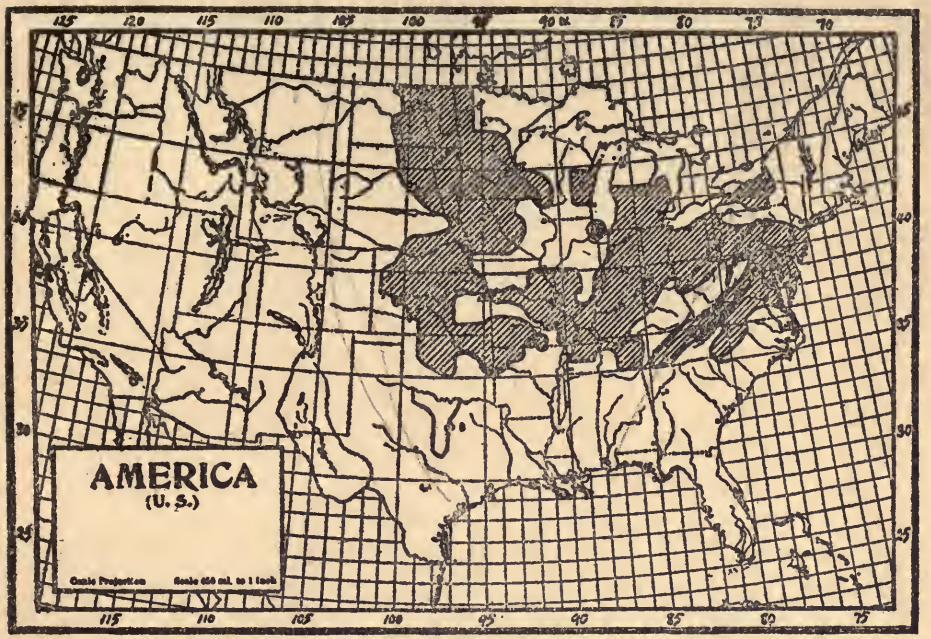
Next to rental the great necessity is for water. Meter rates for city water, which for purity is without an equal, is seven cents per 1,000 gallons. An ordinary family, in a seven room house, with bath, closet and laundry, will consume about 22 cents' worth of water per month. With these laboring people the rent and water absorb not to exceed one-fourth the income of the head of the family.

The educational department of the city government makes a persistent, and very successful effort to keep the children of these foreign laborers constantly in school. The compulsory education law is rigidly enforced by truant officers and the number of children who escape school up to and including the eighth grade are very few as compared with the total. There is no section of the city that is not provided with school facilities of all kinds which are tuition free for all pupils. While all foreigners of the laboring classes are not alike, the large majority of those in this city do not fail to appreciate the advantages the public provides that the children may attain a higher position in life than the parents have reached or than the children could ever hope to secure in their fatherland.

All these benefits make the common laborer contented with his condition, satisfied with his wage and industrious in his lowly calling.

With skilled labor the conditions are much the same. The growth of industrial enterprises, as shown in preceding pages, gives him constant employment at remunerative wages. It is rare that a satisfied artisan is a discontented one. The skilled laborers in Chicago, besides the Americans, the English, Scotch, Irish, Swedes, Norwegians, Canadians, and Swiss, who speak our language, are interested in public affairs and are among the very best of our citizens. They live well, have comfortable homes, and are staunch supporters of our schools, churches and public societies. This class forms the "governor" on the machinery that holds in check the efforts of the more radical in the advocacy of labor disturbances. A very large proportion of this class own their own homes. With its 190 square miles of city territory, suitable locations for homes are not beyond the means of the average industrious mechanic, while building materials are comparatively cheap. A well-housed, well-paid and well-clad skilled workman is not one who "quarrels with his job." The wages of this class are on the average lower than are paid them in may cities and this is caused by the lower cost of necessaries of life, especially food. Chicago is the center of the food producing area of the country and it is apparent that food products received here are not compelled to bear the burdens of long transportation as is the case in markets more remote from the points of production.

The working man in Chicago can have more luxuries on his table than anywhere outside of the agricultural and productive center of the country. The choice cuts of beef and other meats are high here as they are at the East or South, but good, wholesome meat, that is not demanded in other great markets, is abundant and at reasonable prices. Butter, milk, poultry and eggs are produced in abundance within fifty miles of the city limits and the cost of delivery is far from excessive.



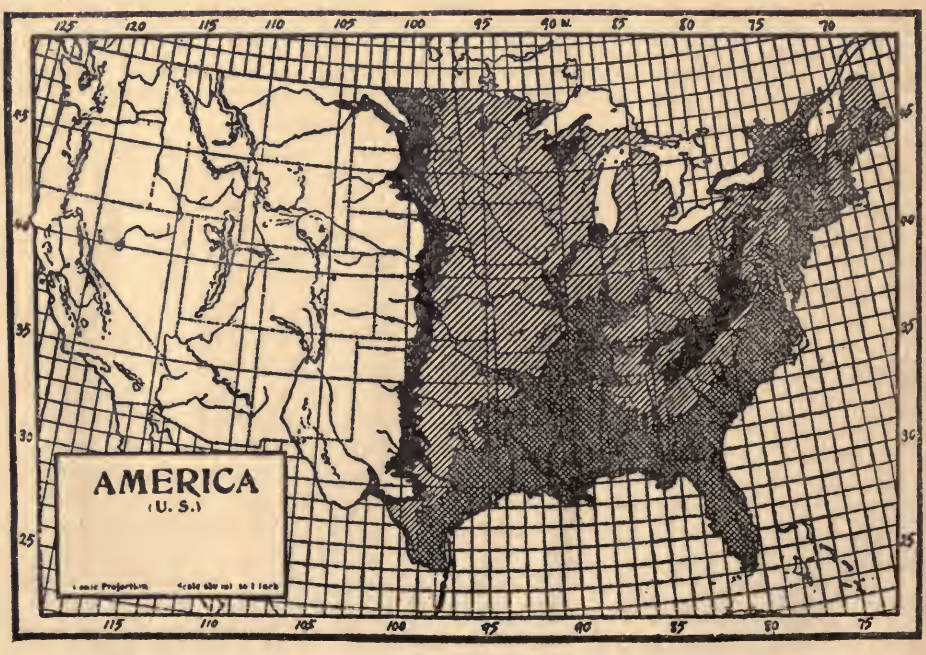
FROM REPORT OF HARBOR COMMISSION. WHEAT AREA OF THE UNITED STATES.

Chicago is the largest fruit market both in the variety and quantity of products in the United States, and much of the fruit, like berries, cherries, peaches, apples and grapes, is produced in the immediate vicinity of the city, while the tropical and sub-tropical fruits are always abundant in the city markets. Choice fruits are not luxuries in this city.

While these advantages are important in their bearing in making the workman contented, there is another element that has a still stronger influence upon him. There is no subject that is more frequently discussed by students in sociology than the constant and increasing tendency of young men to leave the country and come to the cities. This is shown by the enumeration of the population at each decennial census. In 1870 the urban population of the United States, that is population in cities of 8,000 or over, was 20.9 per cent of the total; in 1880 it was 22.6 per cent; in 1890 it was 29.2 per cent and in 1900 it was 33.1 per cent. In 1900 the total population was 75,468,039, of which 24,992,199 resided in the cities. This shows itself in this way: manufacturers in small towns and cities, with every accessory for profitable business, find they cannot keep in their employ their best operatives. The small place is without the attractions and diversions that are abundant in a metropolis. With its parks, theatres, entertainments of various kinds, and the attractions always to be found in the swing of city life, the young man is drawn from the country to the large centers of population. The larger wage he receives in the city is an additional attraction for he does not stop to consider that all his pleasures make a serious drain upon his larger income.

If the workman is a foreigner he is drawn to the city by the fact that there are more of his own people there than in the country and he is anxious to add to the pleasure he will have in associations that will connect him with his old home.

This desire for the atmosphere of cosmopolitan life, while it is unquestionably injurious to the country, is an asset of great value to the manufacturer located in a city. It gives him an ample number of both skilled and common workmen in his regular business and in case of an emergency, when he may desire to increase his operating force, either temporarily or permanently, he has an unfailing supply upon which to draw. His work need never be delayed, or crippled, because of a failure to secure competent operatives.



FROM REPORT OF HARBOR COMMISSION. CORN AREA OF THE UNITED STATES.

VII.

CHICAGO, ITS WAGE EARNERS AND THEIR WAGES

"The laborer is worthy of his hire." Poorly paid labor is the most expensive, and, conversely, the highest paid is the most efficient service in the world of industry. Except in rare instances when the labor to be performed requires some peculiar mental qualifications or technical discipline the compensation for work executed is regulated chiefly upon the cost of living and this, of course, is greatly influenced by the market conditions at the locality where the labor is performed. The degree of hazard, like work on tall steel structures; or the menace to health, like glass blowing, will enable workmen to secure a compensation above the value of the actual work performed, as measured by hours, but these are exceptional occupations and so far as wages are concerned are "a law unto themselves."

It is true also, that wages are, to some degree, controlled by trades unions, but such modifications as they ask for are all based upon the cost of living within the district over which any particular union may exercise its influence. During the late winter and early spring months of the present year, the demands for an increase of wages were universal throughout the entire United States, but in all cases the requests for an advance of wages was based upon the abnormally high cost of nearly every commodity that entered into the family expense account. Whatever may have been the causes for the admitted increase in the cost of living, such increased cost may be regarded as temporary and there is little doubt but that the movement towards lower prices, which is already noticeable, will soon reach the normal standard.

In a recent government report on the cost of living, the quantity of food consumed, annually, by the average family of five persons, is as follows (omitting fractions): Fresh beef, 394 pounds; flour, 680 pounds; potatoes, 14 bushels; eggs, 85 dozen; butter, 117 pounds; sugar, 268 pounds. There is no one of these commodities that is higher in the Chicago market than in that of any large city, and most of them are here perceptibly lower. While the difference in price per item is small, it amounts to a very considerable sum to the wage worker for the entire year. Such a saving would be in Chicago $43.00 as against Boston; $26.00 as against Detroit; $58.00 as against Pittsburg, and $51.00 as against New York.

These figures are for an ordinary family but it is a notable fact that with the hundreds of thousands of unskilled working men, the vast majority of whom are of foreign birth, the food used is such as they are accustomed to use in their native land and can be purchased at a much less cost than the average food consumed by the American wage worker.

In the outskirts of the city there are large areas of vacant property which are wholly unoccupied and the use of this land is given in small tracts to working people for cultivation without cost and is tilled by the family of the beneficiary. In this way very many furnish their tables with all the garden vegetables and potatoes consumed by the family.

There are hundreds of acres of market gardens within the city limits the products of which are marketed from wagons on the streets at prices very much below those asked for similar articles at the grocery stores or in the general market places.

Very many of the skilled artisans of the city own homes and live in the suburbs, all of which are easily accessible by street car lines, the elevated roads or the steam railroads which run, morning and evening, many trains to accommodate those living beyond the city limits. Within twelve miles of the center of the city there are nine large villages or cities which have frequent trains over some one of the many transportation lines, the fare being rarely in excess of five cents and in few cases over ten cents. Of these villages more than seventy-five per cent of the adult male population have their work shops or places of business within the city limits. In those suburbs, rents are, as a rule, very much lower than they are in the city, while lots for residences are within the reach of every skilled working man with any idea of frugality. All these villages have education facilities fully equal to those provided for pupils in the city schools.

The price of labor is kept within the bounds of fairness and reason by three principal causes. The first is the economy of living occasioned by the cheaper cost of food; the second is the natural effect of competition between workmen that always exists where labor is abundant; the third is the large number of working men and laborers who go into the country for work in the summer months, when there is the least demand for labor in the city, and return in the early fall when there is the heaviest city demand for workmen of all classes. This last class is made up of sailors on the lakes during the busy season, farm hands and the large number of employes at the hundreds of summer resorts about Chicago. The wage earning population of the city, which embraces those who work in and about manufacturing plants, of which there are over 9,000, is variously estimated at about 250,000, while the unskilled labor population is estimated at about 300,000. With such resources to draw from, the employer is never short of operatives at a wage fair to both parties.

But it may be asked, why it is, if labor conditions are so satisfactory in the city, that it has so many labor troubles in the form of strikes and lockouts? The answer is plain and direct. Chicago has fewer labor disturbances and disputes than any city of the first class in the country.

It is true that within the last fifteen or twenty years there have been two or three spectacular strikes in this city of which glaring and sensational reports were given in the local press and still more lurid accounts put on the wires for publication in newspapers in other sections of the country. But with these exceptions, Chicago has been remarkably exempt from disastrous industrial convulsions that were local in character. In common with the country in general, this city has been the victim of labor troubles, like the strike of the railway employees in 1888, which extended from February to August in that year, and involved the railroad systems of the United States. A similar convulsion was the so-called Pullman strike of 1894, which reached to the Pacific Coast.

The period of greatest unrest in the labor world extended through the twenty years between 1880 and 1900, during which time Chicago had all told, 1,737 strikes of all kinds, as against 5,000 in New York, or

an average of eighty-seven a year here, as against 250 for the same period in New York.

Since 1900 labor troubles have not been important. The teamsters' strike in May, 1903, attracted considerable attention but it affected few concerns and was made vastly more of than it deserved. A stranger in city might have noticed that some trucks and drays had a policeman occupying a seat with the driver, but that is all. There were cases of individual violence, but otherwise the city was orderly. In July of that year the freight handlers struck, involving some 9,000 men. The strike lasted seven days. In November, the employees of the City Railway Co. became dissatisfied and quit work. In 1905 a sensational strike of the teamsters, employed by one of the firms of the city, received much more publicity than it merited. It lasted for a week or more and was attended with some violence, but it concerned and affected only the firm engaged in the dispute.

In a city with 10,000 manufacturing establishments there will be differences of opinion between an employer and his employees, but the latter have learned that a strike is not only exceedingly disastrous to them, but also is a poor expedient even as a last resort. The employers have found that the better way is to meet their men with a spirit of fairness. Experience has been an excellent teacher and both sides have profited by their schooling, expensive as it has been in some cases to each. Commonality of interests appeals to both sides as the best remedy for real or fancied grievances. Fairness leads to compromise and compromise leads to peace and prosperity for all parties. Success in business depends, in a great degree, upon steady employment.

Notwithstanding the fact that Chicago is, by no means, exempt from either working men who are radical and dictatorial, or from employers who are unjust and penurious, yet these two extremes constitute a small proportion of employees and employers. There is here an enlightened general sentiment which forms a public opinion that is respected by every class of labor and business. It is the balance wheel that preserves peace and is a strong element in the prosperity of Chicago.

	Wage Earners.	Wages.
New York*.....	464,716	$248,128,259
Chicago.....	241,984	236,404,096
Philadelphia.....	228,899	107,640,307
St. Louis	82,093	42,642,358
Boston.....	59,160	31,873,185
Baltimore.....	65,224	25,633,550
Pittsburg.....	56,229	31,540,678
Cleveland.....	64,095	33,471,513
Buffalo.....	43,567	21,621,762
San Francisco	38,429	25,015,427
Detroit.....	48,879	22,786,576
Cincinnati.....	58,584	27,389,569
Milwaukee.....	43,540	20,910,009
New Orleans	17,631	7,444,474
Washington.....	6,299	3,658,370

*Includes Brooklyn.

VIII.

CHICAGO, ITS BUSINESS CONDITIONS

Given an adequate market, the chief factor in the successful conduct of business operations is the economy with which they can be carried on. The expenses of conducting commercial and industrial enterprises may be classified under two general heads, viz.: first, fixed charges, like overhead expenses; superintendence; officers' salaries; compensation paid clerks; taxes; insurance; general wear and tear; repairs; and, second, such general manufacturing expenses as labor and materials. The former go into the account for general expenses while the latter are figured in the cost of the product.

In the fixed charges, one important item that materially affects them is the cost of living, which is discussed in another section of this volume under a special heading. The general manufacturing expenses are influenced by a very large number of conditions, which are beyond the control of the manufacturer. Upon the subject of raw material, reference is made to a preceding section of this volume, in which that subject is elaborated upon. The effect of abundant raw material is shown in the cost of erecting building plants, which is approximately twenty per cent less in Chicago than in cities where such products are less abundant.

For the creation of power, heat and light, coal is the principal material used whether the plant is operated by steam or electric energy. There are in Illinois 102 counties of which 55, or more than one-half, are within the bituminous coal area of the state and produce that commodity for commercial purposes. These counties have 933 mines, yielding about 50,000,000 tons annually. They ship mine run, lump, egg, nut, pea and slack product, the average value of which, at the mine, is $1.037 per ton, varying from $1.296 to $0.336 per ton. The best qualities of this coal delivered in Chicago varies in price from $1.40 to $2.00 a ton; coal of equal value selling, in Atlantic seaboard cities, at from $3.00 to $3.50 a ton. This advantage possessed by Chicago is of vast importance in manufacturing, whether the plant is operated by steam or electric power. Some of our electric power plants use thousands of tons daily of coal in the driving of dynamos, and cheap coal results, materially, in economical electric power and light.

Water power is very abundant along the Sanitary canal and is used in the place of steam for the development of electric power which is sold at prices which make that power cheaper to the consumer than in any other large city of the country. As an illustration of the low cost of electric power, it may be said that the power for the Joliet penitentiary was, early this year, contracted for at one cent per kilowatt hour. The power is sold on a sliding scale and any consumer can purchase it at that price, or even less, provided the consumption justifies so low a rate.

The subject of taxation is one which cannot be ignored in estimating the cost of doing business. It is a little difficult to give the amount of taxes levied upon a given quantity of property because all cities do not use the same basis for assessment. Some levy taxes upon a full cash valuation; others upon one-third, and others still, upon one-fifth. In

some cities street improvements are paid for out of the general fund while in others they are provided for by the levying of special assessments, according to benefits received, upon abutting or adjacent property. This last condition does not relieve the property owner for in one case he pays the expense out of his own pocket directly, while in the other, he pays it into the city treasury as a portion of his taxes.

The Census Bureau, in September, 1908, issued a bulletin entitled "Statistics of Cities Having a Population of over 30,000 in 1906," on page 281 of which is given rate of taxes per $1,000. The following table shows that the rate in the fifteen cities of the United States that are credited, in the bulletin, with a population of 300,000 or over:

City	Rate of tax Per $1,000
New York	$13.59
Chicago	8.06
Philadelphia	14.55
St. Louis	8.70
Boston	14.92
Baltimore	18.78
Cleveland	16.31
Buffalo	14.64
Pittsburgh	14.55
San Francisco	4.88
Detroit	15.46
Cincinnati	10.75
Milwaukee	9.35
New Orleans	16.50
Washington	10.26

In Chicago the cost of street improvements is paid by special assessment and not out of the general treasury. This is the case of some others of the listed cities. At the time these statistics were compiled, San Francisco had not reached its normal condition since the disaster of that year.

The following table, prepared by the Chicago Real Estate Index Co., shows the taxes levied during 1907, 1908 and 1909, in the different towns making up the city of Chicago:

	1907	1908	1909
West Chicago	$7.70	$7.98	$4.91
South Chicago	7.20	7.52	4.47
North Chicago	7.57	7.84	4.84
Hyde Park	7.20	7.52	4.47
Lake	7.20	7.52	4.47
Lake View	7.71	8.00	5.05
Jefferson	6.48	6.74	4.03

In 1907 and 1908 property was assessed at one-fifth its cash value but the state law was changed that year requiring the levy to be made on one-third of the cash value. The reason why one section of the city has a higher rate than another is due to the different sums expended on parks. This park tax varied from forty-four cents to $1.26 in the differ-

ent towns. With $500,000 invested in a manufacturing plant any one can estimate the amount he would save in taxes alone if his establishment was located in Chicago rather than in any of the cities included in the foregoing list.

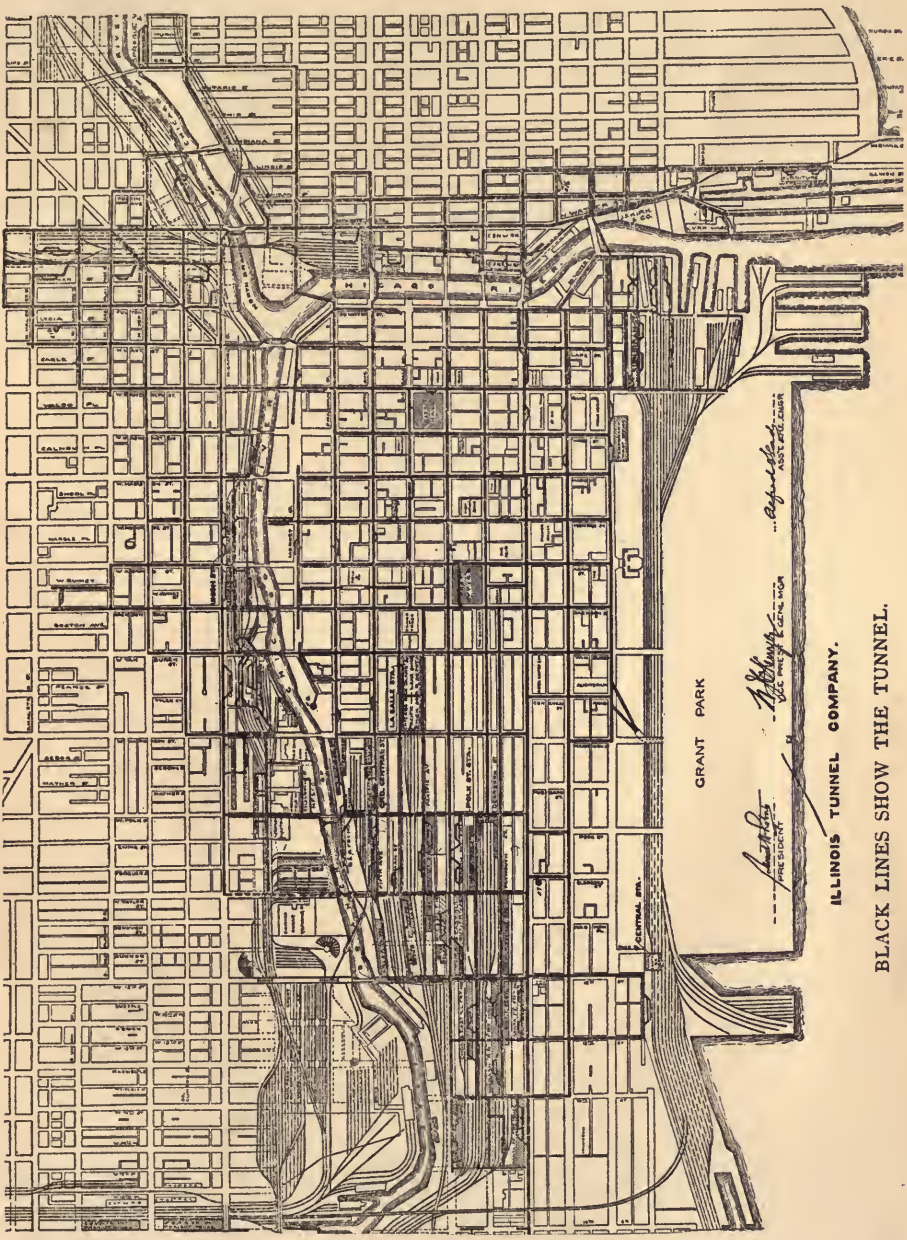
One reason for the comparatively low rate of taxation in Chicago is the small gross debt of the city, the small debt per capita and the very light interest tax per capita. The following table gives the statistics issued by the Census Bureau:

City.	Gross Debt.	Debt Per Capita.	Interest Per Capita.
New York	$798,679,054	$189.01	$4.58
Chicago	84,449,874	40.07	1.28
Philadelphia	74,387,488	50.73	1.33
St. Louis	18,640,951	28.17	1.20
Boston	105,092,706	172.52	6.68
Baltimore	48,070,933	85.67	2.15
Pittsburg	42,813,778	80.55	2.39
Cleveland	32,844,514	69.02	2.39
Buffalo	22,464,303	58.09	1.83
San Francisco	4,922,983	*....	*....
Detroit	12,250,942	33.34	0.86
Cincinnati	50,516,043	145.53	3.96
Milwaukee	10,656,231	33.04	1.08
New Orleans	28,188,326	88.46	2.63
Washington	14,296,893	45.74	1.54

*Not computed.

The expenses incident to drayage make a heavy demand upon both manufacturer and merchant. There is more freight transported upon drays in Chicago than in any other American city, a recent magazine writer putting the tonnage so carried in Philadelphia and Boston at 65,000 tons each daily; in New York about 75,000 tons, and in Chicago about 100,000 tons. The writer says "figure the millions upon millions that are spent each year by the merchants and manufacturers for this service, the thousands of men to whom they give employment and the millions of dollars that are tied up in horses, trucks, harnesses and stables, and the total is almost inconceivable." Not long ago an investigator in this city made a careful estimate of the amount expended annually by the business men of this city for the transfer of their goods through the streets of Chicago and found that it aggregated a sum larger than that received annually by one of our largest trunk lines of railway for the transportation of freight over its entire system.

But so far as Chicago is concerned, this heavy drain upon business is being rapidly eliminated. There has been constructed in the city more than 58 miles of tunnels, underlying the entire down-town district, and connecting the wholesale business houses and manufactories within that area with every railway freight station in the business center. In other cities the subways are for the transportation of passengers, leaving the streets to the drays, but in Chicago the tunnel is for the conveyance of freight, ashes, coal, etc., reserving the surface for the people. Most of the 58 miles of these tunnels are six feet wide and



seven and a half feet high, the roof forming an arch. There are, however, what are known as trunk tunnels, which are about twelve feet high and from ten to fourteen feet wide. In fixing the size of the tunnels the city council took into consideration that they must be made high

and wide enough for a man to work in comfortably, and with not only ample space for the suspension of the telephone wires from the roof and side walls, but also space for the future growth of the system. It was stipulated that the tunnels were to be about forty feet under ground, and this plan has been followed, thus bringing the tops of the tunnels about thirty-three feet below the street level. The tunnels go under the Chicago River in eleven places and at such crossings they are about 60 feet below the surface of the stream. By placing the tunnels at this depth below the street level, the sewers, water and other pipes, which fill up a city's streets, were all avoided, and there was also left ample room above the tops of the tunnels for the construction of a subway system for the street car traffic of the city in case it was ever determined to build one. The Tunnel Company cannot carry passengers through its bores, under its franchise.

The Tunnel Company carries freight, inbound and outbound, delivers coal and removes ashes and other debris and rubbish. The cars, operated by electricity entirely, have a capacity of three tons each and are drawn to the elevators directly underneath the establishment to be served, where they are placed on the elevators and hoisted to any desired floor of the building in which they are loaded or unloaded as may be desired.

This tunnel system is of benefit to business in two principal ways: first, it relieves the merchants and manufacturers of all cost of drayage, the railroads, to which the goods are delivered or from which they are received, paying the company such charge, which is small in comparison with the expense of drayage with horses, and the convenience and economy to the railroads themselves; second, it enables jobbers and producers to carry on their business for the entire twenty-four hours of the day, instead of eight or ten hours as formerly. The old system was to pack goods in the afternoon and leave them for delivery at the freight stations the day following. Under the tunnel system, a car is, late in the afternoon, elevated to the packing floor; the boxes or bales are placed therein; it is lowered to the tracks, forty feet beneath the sidewalk; transferred to the railway car at the freight station and, before nightfall, the goods are on their way to their destination.

Another means for the economical handling and exchange of freight, both from shippers and from one railroad or station to another, is the various belt lines of railroads which intersect the tracts of the roads centering at Chicago and collect and distribute in-coming freight among the various terminals at which it is to be delivered to the consignee, or out-going freight to the terminal of the road over which it is to be conveyed to its destination. This arrangement saves not only a vast amount of drayage expense, but time in the expeditious handling of freight of all kinds, especially that class known as L. C. L. (less than car load lots). Omitting several small lines which perform their principal service for some particular industry or industries, the more important of these belt lines, with the mileage, owned or operated, are the following:

Belt Railway of Chicago, 39 miles of main line and second track.
Chicago & Western Indiana, 94 miles of main line and second track.
Indiana Harbor Belt, 106 miles of main line and second track.

Chicago Junction Railway.

Illinois Northern, 5 miles of main line and second track.

Chicago Union Transfer Railway, 100 miles, classification yard and main line.

Chicago Terminal Transfer, 130 miles of main line and second track.

The principal function of the Belt Lines is to afford the various railway systems centering at Chicago a means of interchanging freight traffic. The trunk lines radiate from the central portion of the city towards the southwest and north in a fanlike formation, the eastern and southern lines being grouped on the south, and the northern and western lines on the north and west sides of the city.

The lines of the principal belt systems, viz., the Belt Railway of Chicago and the Indiana Harbor Belt, extend north and south along the outer sections of the city and intersect all of the trunk lines, whose outer freight yards are located at or near these points of intersection. This general arrangement of freight terminals provides an efficient inexpensive and rapid means of moving traffic from one line to another, and to further assist in the handling of this interchange freight these facilities are being rapidly extended.

The Chicago & Western Indiana provides passenger terminals for the Wabash, Erie, Atchison, Topeka & Santa Fe, Grand Trunk and Monon railroads, and the Chicago Terminal Transfer Railroad for the Baltimore & Ohio, Pere Marquette and Chicago Great Western Railways. In addition to this, these two belt lines furnish trackage facilities to various trunk lines for the movement of both freight and passenger traffic.

The Chicago Junction Railway provides both trackage and handling facilities for the very heavy traffic moving to and from, and passing through the Union Stock Yards district.

With the growth of the city the area of the L. C. L. distribution has extended several miles from the central section, and to provide convenient and economical facilities for the movement of L. C. L. business, union freight receiving stations have been located at various convenient points. L. C. L. freight for all lines is accepted at these stations, assembled and delivered to the forwarding line without expense to the shipper. Union receiving stations are located as follows:

C., B. & Q., 19th Street and Western Avenue, Blue Island Avenue and Paulina Street.

C., T. T., Kedzie and Central Park Avenues.

Chicago Junction, 43rd and Robey Streets.

Illinois Northern, 26th Street and Western Avenue.

Chicago, West Pullman & Southern, West Pullman.

C. U. T. Railway, Clearing.

Illinois Tunnel Company, West Jackson Boulevard, Dearborn Avenue and North Water Street, 406 North Water Street.

No city or market in the world has the facilities for handling the out-of-town business as expeditiously and economically as it is done in Chicago.

Banking facilities are one of the prime essentials to a great market and industrial center. There is no pretense that, in this particular, Chicago has advantages over every other American city of equal size,

but it is asserted that no city has better or stronger banking conveniences to meet successfully all demands of honest and legitimate business that may be made, than are possessed by Chicago. There are in this city, besides purely savings institutions, fifty-eight banks of which seventeen are national and forty-one are state corporations. The standing of these banks January 1st, 1910, was as follows:

	Deposits.	Loans.	Resources.
National	$412,075,763	$279,145,760	$164,946,691
State	386,016,154	248,321,131	107,098,024
Total	$798,091,917	$527,466,891	$272,044,715

Deposits in savings banks not included in foregoing table, amounted February 1, 1910, to $171,111,840.

For protection against fire, no city in the country has more ample provision. No leading fire, or life, insurance company, that does an agency business, is without a Chicago office, and rates do not differ materially from those required in many other sections of the United States. The city fire department is one of the strongest in the country. It has a force of 1,879 men, 117 engine companies, 34 hook and ladder companies, 733 horses, 4 fire boats, 1 water tower, 126 fire engines, 151 hose wagons and carriages, 43 hook and ladder trucks, 43 chemical extinguishers, 189 portable pumps, with various other appliances for the protection of property against loss or damage by fire.

In all the essentials required for the safe and successful management of industrial or commercial operations, there is no city on this continent that can claim precedence over Chicago. It is not the intention, in dealing with this subject, to enumerate inconsequential details in the matter of advantages, but to show natural conditions and supplemented instrumentalities that are most important in successfully conducting business operations. Possessing these, minor advantages take care of themselves.

IX.

CHICAGO, ITS INTERNAL TRANSPORTATION

It is essential that a manufacturer should be so located that his plant is accessible to the largest number of laborers upon whom he must depend for operatives in his manufactory. In addition to this, his works, be they large or small, should also be in close touch with the financial and commercial center of the city. In either case the means of transit furnished to the people by the various lines of communication between different sections of the city has a very important bearing on the ease and dispatch with which business can be transacted.

There is no section of the city, however remote from the loop district, which is the business center of Chicago, that is not easily and expeditiously reached by some one of the surface or elevated lines of railway, nearly all of which extend to the suburbs adjacent to, and beyond, the city limits. More than 30 cities, towns and villages, outside of the city limits, can be reached any hour of the day or night by some one of the means of conveyance that are in operation at very reasonable rates of fare. The cost of such conveyance is not appreciated by persons not familiar with the conditions in Chicago. Not long ago a party of strangers were occupying the smoking compartment of a west-bound passenger train. One of the party was a New Yorker and he was astonishing his companions by telling how far a person could ride in his home city on the street cars for a nickel. In the party was a Chicago resident, and, after hearing the New Yorker's story, he said: "That is nothing. In Chicago I can ride more than 25 miles for a nickel." The New Yorker was nonplused and rising from his seat extended his hand and said: "Shake, I am glad to meet the president of the Ananias Club," and left the compartment. The truth is that the Chicagoan considerably understated the actual facts. By the system of transfers in vogue in Chicago, it is easily possible to ride more than 25 miles for a single fare of five cents.

The several surface lines which reach every section of the north and west divisions of the city, are owned and operated by the Chicago Railways Company, while those of the south division are controlled by the Chicago City Railway Company. The mileage of these two companies is 933 miles.

Besides these surface lines, there are four systems of elevated roads, reaching each division of the city, and which pass their trains around the "loop," in the center of the wholesale and retail district of the city. Approximately this "loop" is a mile long by half a mile wide, and double tracked. All these roads run their trains at intervals of from two to ten minutes apart during the day, being more frequent in the "rush hours" of morning and evening than during the remainder of the day. They are operated, but at less frequent intervals (from 25 to 35 minutes apart), during the night. As the trains run on an elevated structure they are not delayed by any congestion in the streets over which they pass.

The Northwestern Elevated Road has, with its branches, a total mileage of 20.37 miles and extends to Evanston, a distance of 12 miles, and also to Ravenswood. During the rush hours its trains move at intervals of 2 and 4 minutes and after midnight once in 35 minutes.

The South Side Elevated Road, with its branches, has a mileage of 35.5 miles, running to Jackson Park, Kenwood, Englewood and the Union Stock Yards. Its trains run at intervals of from 3 to 20 minutes, according to the time of day.

The Metropolitan Elevated Road reaches each of the great West Side parks, Garfield, Douglas and Humboldt, and has a mileage of about 25 miles; moving its trains at intervals of from 3 to 30 minutes.

The Chicago & Oak Park Elevated Road reaches Oak Park, 10 miles from the center of the city, moving its trains at intervals of from 2 to 40 minutes according to the demands of the day. These four roads are capitalized at $95,037,700 and are 182 miles in length, including branches.

The cars used by these roads are large, clean, airy and well ventilated. It is true that in the rush hours, from 7 to 9 in the morning and from 5 to 7 in the evening, they are crowded to their full capacity, but the service is otherwise beyond just criticism.

The surface roads cover a territory 26 miles in length by 9 in width and radiate from the loop district to the remote sections of the city. They have in the aggregate a mileage of 933 miles and since the rehabilitation of the systems they are not surpassed, in the accommodations given the public, by any city in the country. These roads are capitalized at $113,263,800.

From the "loop" something like twenty main trunk lines of these surface roads radiate, most of them taking cars of one or more connecting sub-trunk lines which are dropped off at junction points and proceed to their destination. The interchange of transfers between crossing lines is very general. As a single instance of the value of these transfers the case may be cited where a person can ride from Seventy-ninth Street in the south division of the city, to the extreme limits of the north division, a distance of 19½ miles, for a single fare of five cents, and on some lines it is possible to ride a still longer distance, as from the north limits to Maywood, nearly four miles west of the city limits, a distance of over 23 miles.

Besides these means of conveyance, steam railroads operate trains during the day between nearby suburban villages and their passenger stations in the business center. Four of these roads run 850 trains daily in this service and, as will be seen by the following table, carry a very large number of passengers, at commutation rates, that are very near those of the elevated and surface roads.

The following table shows the number of passengers carried by these various lines of transportation in 1909:

Chicago City Railway Co.	312,914,492
Chicago Railways Co.	423,604,563
Northwestern "L"	41,539,574
Metropolitan "L"	52,519,609
South Side "L"	42,722,624
Chicago & Oak Park "L"	15,628,059
Suburban Steam Roads	46,585,000
Total for the year	935,513,921

or an average of 2,387,026 each day of the year.

Everyone who is familiar with the foreign population of this country understands that it is gregarious, the different races, very generally, forming communities by themselves and Chicago is no exception to that rule. Every manufacturer has learned by experience that one race is better adapted to the work he has to have done than any other. The question of local transportation is therefore an important one for him because, with practically unrestricted facilities for the conveyance for his employees, he is always within easy reach of the people he employs, especially at such times as the exigencies of his business require additional operatives for short periods. The traction and elevated lines leave no section of the city unsupplied and if the employer knows where the kind of labor he seeks is concentrated, he has no difficulty in reaching and securing it. The English, Scotch and Irish are very well distributed throughout the city, but the Germans are numerous in the 24th, 26th and 27th wards; the Poles in the 16th and 11th; the Swedes in the 25th and 27th; the Russians in the 9th, 10th, 15th, 19th and 20th; the Bohemians in the 12th, chiefly, with many in the 10th, 29th and 34th; the Italians in the 17th and 19th; and the Norwegians in the 28th, 15th and 35th wards.

The number of passengers carried by the various interurban roads terminating in Chicago is not included in the above enumeration, although it is very large. But as some of these roads connect with the elevated trains at, or near, the city limits, many of the passengers they carry are credited to other means of conveyance. The important interurban roads are the Chicago & Milwaukee, which passes through sixteen large cities and towns; the Aurora, Elgin & Chicago, which connects such cities as Elgin, Belvidere, Rockford, Aurora, Freeport, Janesville, and Madison, besides eleven other large and prosperous towns; the Chicago & Joliet, which reaches Lockport, Summit, Willow Springs, besides branches that pass through Batavia, Yorkville, Geneva, St. Charles and other suburbs.

More important than these last mentioned, as directly affecting the comforts of the people, are the numerous steamers on the Lake that give daily excursions in the summer months reaching to ports on the west shore of Michigan. That state abounds in lakes and summer resorts of great beauty, at which thousands of Chicago people spend the months of July and August. As a rule, the exodus to Michigan and Wisconsin resorts begins with the close of the public schools. The families live in neat cottages on the shores of some lake and the children "run wild" through the summer. The head of the family can leave the

city on some Friday evening steamer and be with his family Saturday and Sunday and, returning Sunday night, can be in his office Monday morning at his usual hour. Twelve lines of these lake steamers have their home port at Chicago, and serve to make this city one of the most delightful summer cities in the country. The economy with which homes can be maintained in these near-by summer resorts is due to the low rates of fare on the Lake steamers, the cheapness of family supplies in both Michigan and Wisconsin, and the very short distance one has to travel to reach them.

Abundant means of transportation, at reasonable cost, both to the city limits and the adjacent country, is highly prized by those who reside here as well as by those who make Chicago their headquarters while visiting the resorts with which it is in close touch.

X.

CHICAGO, AS A CITY OF HOMES

A home is something more than a place where a man eats and sleeps. If he has a family growing up about him, it may be doubted whether the surroundings of his domicile, and those features of city life which contribute to his enjoyment and pleasures are not as vital in the development of a higher life as the roof above his head, or the food upon the table of his family. It is universally so regarded, and no inconsiderable sums of money are annually paid out of every city treasury for expenditures under the classification of "recreation." As an evidence of the high regard in which public diversion is held in American cities of 50,000 population and over, it may be cited that while education costs on the average $1.53 per capita, $0.48 per capita is expended for pastime, or nearly one-third as much as for schools.

Under "recreation" may be classed parks, boulevards, public conservatories, children's play-grounds, band concerts, and other expedients that make life enjoyable to the great masses of people which make up a city's population. There was no city of the first class (300,000 or over) that expended more money, per capita, in 1907, for public recreation than the city of Chicago. Of those ranking next below Chicago, which in that year expended $1.22 per capita for this purpose, are Cleveland, $0.89; New York, $0.56, and Detroit, $0.51. The same year (1907), however, Chicago expended for health conservation and sanitation, $1.43 per capita, while New York expended for those objects $0.83 per capita.

The Park System of Chicago is one of the most elaborate and wisely planned of any similar public improvement certainly in this country. The parks and boulevards are so arranged as to place one or more of these recreation grounds in each of those localities where the resident population can reach them most expeditiously, and which are, at the same time, most accessible to the center, or congested, sections of the city. The park areas are divided into systems as follows: South Park System, 2,049.95 acres; West Park System, 1,029.06 acres, and Lincoln Park System, 569.89 acres; other small parks and squares, 117.15 acres, making a total of 3,766.05 acres. In addition to these is the North Shore Park district which, while it has as yet no parks, has four miles of boulevards, including Sheridan Road, Ashland Avenue and Pratt boulevards or drives.

The South Park System embraces Jackson Park (542.89 acres), Washington Park (371 acres), Marquette Park (322.68 acres), Grant Park (201.74 acres), McKinley Park (74.88 acres), Gage Park (20 acres), Sherman Park (60.60 acres), Ogden Park (60.56 acres), Palmer Park (40.48 acres), Hamilton Park (29.95 acres), Bessemer Park (22.88 acres), Calumet Park (66.19 acres), with eleven other small parks and squares containing from 20.19 to 7 acres each.

The West Park System includes Humboldt Park (205.86 acres), Garfield Park (187.53 acres), Douglas Park (181.99 acres), Union Park (17.37 acres), with nine smaller parks having areas of from 1.13 acres to 10 acres each.

The Lincoln Park System takes in Lincoln Park (452 acres), with four small parks varying in area from 1.73 acres to 9 acres each. These systems are connected by wide boulevards, paved with asphaltum, and vary in width from 66 feet to 200 feet, generally with a park area in the center, and lined with shade trees. The total length of these boulevards and drives is about 65 miles.

The parks are beautifully wooded, with walks, drives, bodies of water for boating, flower gardens and picnic grounds. One of them has one of the largest zoological collections in the country, with elephants, buffalos, bears of many kinds; lions, tigers, seals, prairie dogs, and many rare and interesting foreign and domestic animals and birds. At Garfield Park is the largest conservatory in the country, filled with tropical plants and trees of innumerable variety. Some of the parks have golf links, base ball grounds, tennis courts, and other facilities for recreation and games. They are all adorned with statuary and other objects of interest and instruction.

In one respect, Chicago is unrivaled by any city in the world, and that is in the number and extent of small parks, or children's playgrounds. There are between sixty and seventy of these public neighborhood centers of recreation of which thirty are small parks and squares, fourteen are playgrounds; seventeen are small parks and playgrounds combined, and three are bathing beaches. At the neighborhood centers are commodious buildings of concrete with rooms set apart where women can congregate, hold their club or other meetings, or visit, as they see fit.

No one is so poor as to be excluded from the occupancy and use of these centers, nor so rich as not to recognize their full value in furnishing relief from the hard conditions of living in the congested quarters of the city.

The children's playgrounds are inclosed with iron fences, from which children cannot escape; they have sand piles, swings, athletic paraphernalia of all kinds, wading pools, and other features for the entertainment of children. They are under the care of public attendants who look after and care for the children, big or little, who may be delivered there by their parents. A woman who goes out to service for a day can leave her children at the nearest playground, certain that she will find them there, safe and sound, when she comes for them. At two of the fourteen playgrounds in 1907, there were 1,602,730 boys and girls who, but for them, would have been in the streets, alleys or some vacant lot, under little or no public or parental control.

The number of people at the bathing beaches averages about half a million each season. Chicago was the first city in the world to provide for public baths for its people. It has now nearly twenty of these institutions, maintained at public expense, which any citizen can use at pleasure. Certain days are set apart respectively for men and women, boys and girls, who are furnished free with bathing suits, soap, towels, with lockers for the safe keeping of their clothing. The large swimming pools are an attraction for men of means, who have bath rooms in their homes, as well as for the poor who have not. Everything about these public bathing places is scrupulously clean and they are always in the best sanitary condition.

The expenditures for these purposes were in 1908, as follows:

South Parks	$1,601,151
West Parks	1,586,455
Lincoln Park	717,287
Small Parks	60,000
Playgrounds	58,000
Bathing Beaches	4,200
Free baths	48,000
Total	$4,075,093

The following table shows the area of parks within the city limits and the percentage of such park area to the total territory of the cities named:

	Inside City Limits—Acres.	Per Cent to Area.
New York	7,197.1	3.4
Chicago	3,412.1	3.0
Philadelphia	4,175.1	5.0
St. Louis	2,198.4	5.6
Boston	2,262.4	10.4
Baltimore	2,071.8	1.7
Pittsburg	1,274.6	5.3
Cleveland	1,133.3	4.3
Buffalo	909.0	3.4
San Francisco	1,398.6	4.7
Detroit	1,058.5	4.3
Cincinnati	450.8	1.7
Milwaukee	550.9	3.9
New Orleans	1,217.9	1.0
Washington	2,245.4	5.8

While these parks are all open and free to the public, at seasonable hours, Chicago has a number of amusement parks, which are enclosed, and to which a small admission fee, usually ten cents, is charged. The principal feature of these grounds is the band concerts given by the best known and most popular organizations in the country. For those who do not care for the music, there are roller coasters, shoot-the-chutes, scenic railways, shooting galleries and shows of various kinds, for each of which a charge is made for admission from five to twenty-five cents. As a rule these amusement parks have fine restaurants which are visited by many of the best people of the city. They are free from rowdyism and are well patronized by those who seek an afternoon or evening of simple fun.

But Chicago abounds in many attractions of a higher order than any of the foregoing, important as those may be for the numerous class that constitutes the larger portion of the population of a great metropolis. There are few recreations that are adapted to every one's tastes. Chicago for many years was the butt of ridicule by those cities which were large, rich and prosperous when Chicago was nothing more than a collection of shacks and log huts sprawled over a marsh. But the city

grew and broadened in refinement, as well as in trade and commerce, until in this year of grace, no city in the United States ranks above Chicago as an educational, artistic, musical and literary center. It has won recognition from its former critics and the few slurs now cast at us are evidences of jealousy and envy rather than of superior culture or refinement. A New York magazine in its January issue, 1907, contained an article on Chicago which said, "Long a popular subject for the humorist of the Eastern States, as well as those of Europe, was the supposed lack of culture and education of Chicago. As a matter of fact, whatever may have been her earlier shortcomings in this regard, Chicago today puts New York, Boston and Philadelphia fairly to the blush."

The World's Columbian Exposition in 1893 was the awakening of the city to a full appreciation of the aesthetic side of life, and since then its progress has been rapid, and marked. The first evidence of this awakening was the organization of the Thomas Orchestra, which resulted in the erection of Orchestra Hall by popular subscriptions, amounting to $900,000.00. The hall seats 2,577 people, and is the finest concert and recital hall in the country. The orchestra is composed of 87 musicians and is second to none in the high standard and character of its members. The orchestra season continues for 28 weeks, two concerts being given each week. In addition to this, there are several musical societies, which have more than a national reputation for rendering classical music, among which are the Apollo Musical Club, the Mendelssohn, the German Maennerchor, and the Irish Choral Society. Musical schools and colleges are numerous and of a high rank.

In the arts of painting and sculpture, Chicago recognizes no superior in America. The Art Institute was an outgrowth of the Columbian Exposition, although a school of art and design had been in existence since 1866. The building costing nearly $1,000,000, stands near the business center of the city in Grant Park, and is filled with paintings and marble from the best masters, and curios without number. It is open to visitors every day; Wednesday, Saturday and Sunday being free to any one who wishes to visit it; the admission fee for other days being 25 cents. As evidence of public appreciation, it may be said that during the last ten years the number of visitors has exceeded those of any Art Museum in the United States, and for the last few years over 700,000 persons have visited it annually. Neither the Metropolitan Museum of New York, the Boston Museum of Fine Arts, nor the Philadelphia Academy can claim nearly so many guests. There is a fine art school connected with the institute, both of which are self sustaining.

Of theatres Chicago has between 35 and 40 of which some thirty are strictly high class, giving attractions of superior character. In all their appointments they are the equals of the best of those of any American city.

That Chicago is now the library center of the country cannot be doubted since it is the headquarters of the American Library Association, which was removed from Boston the past year. This was made necessary from the fact that the West is now the center of library activity of the continent and to meet the requirements of the Association, a change was necessary. When a transfer was demanded New

York and Washington were strong competitors, and Boston sought to retain it, but Chicago was practically the unanimous choice of the committee. This brings to Chicago librarians from all parts of the world annually.

Nothing contributes more, even if somewhat indirectly, to the comforts of living than paved and well sewered streets. Chicago's critics often hold up their hands in holy horror because of our "dirty streets." It may be admitted that some of our streets are littered but "a workman is known by his chips." Where manufacturing is carried on to the extent in which it now is in this city, there will be highways that are not so clean as the boulevards and residence streets, but for pleasure driving, there are few cities which are so free from waste and debris as Chicago's avenues and drives, nor are there any, except in the limits districts, that are more free from water and mud. The following table shows the miles of paved streets and sewers in the leading American cities which speaks well for Chicago:

	Miles of	
	Improved Streets.	Sewers.
New York*	1,908.1	1,834.2
Chicago	1,628.2	1,724.2
Philadelphia	1,307.6	1,103.4
St. Louis	712.0	639.2
Boston	506.2	729.3
Baltimore	506.7	62.3
Pittsburg	463.8	511.9
Cleveland	328.2	447.7
Buffalo	362.7	502.2
San Francisco	298.8	315.4
Detroit	377.6	596.3
Cincinnati	475.7	300.7
Milwaukee	429.5	405.1
New Orleans	221.8	420.0
Washington	325.7	512.2

*Includes Brooklyn.

Pure water and an abundance of it are essential to a sanitary and pleasant home. Lake Michigan which forms, for eighteen and one-half miles, the eastern boundary of the city, is one of the purest bodies of water on the globe. It has always furnished the domestic water supply of the city, but from the settlement of the town to January 2nd, 1900, the lake was also the repository of the city's sewage. Preservation of the public health demanded another outlet for the sewers. At an expense of about $58,000,000 a canal was cut 24 feet deep and 160 feet wide for 32 miles, across the divide between Lake Michigan and the Desplaines River, by which the flow of the Chicago River was reversed and turned from the lake into the Desplaines, finding its ultimate outlet in the Gulf of Mexico.

The effect of this improvement on the public health was pronounced and almost instantaneous. The latest statistics of the annual death rate in comparison with that data of ten years ago, show how important a factor pure water is in the health of a great city. In 1908 the death

rate of the city was 14.5 per 1,000 of population, which is the lowest rate of any city of first class magnitude in the world. This rate has been reached by the prevention of those diseases which are superinduced by contaminated drinking water. The amount of water consumed by the two and one-half million people in the city is about 436,000,000 gallons per diem, and improvements are now being made which will give double that quantity daily. The cost to the family for an unfailing supply daily is nominal—about the expense necessary to keep a well-pump in good order.

	Miles of Water Mains.
New York*	2,091.9
Chicago	2,073.2
Philadelphia	1,529.6
St. Louis	813.0
Boston	743.6
Baltimore	684.2
Pittsburg	402.0
Cleveland	677.0
Buffalo	516.5
San Francisco	**....
Detroit	712.0
Cincinnati	490.0
Milwaukee	409.0
New Orleans	144.0
Washington	449.5

*Includes Brooklyn.
**Not enumerated.

These are a few of the necessities of a pleasant home and an enjoyable sanitary life which are to be found in Chicago. Many important features have been passed over. The level streets, abundant shade trees, alluring short trips to numberless near-by summer resorts, comparative low cost of elegant homes, social pleasures unsurpassed by any municipality in Christendom, and open markets of endless variety are a few of the charms that even the casual visitor will notice. Chicago is called "the Garden City" because of its many homelike allurements.

XI.

CHICAGO, ITS MORAL AND EDUCATIONAL UTILITIES

The moral and intellectual status of the people of any community is measured with more accuracy by its religious and educational institutions, than by any other standards.

The great cities are the nerve centers of the countries in which they are located. They contain the best men and the most infamous, the most magnificent specimens of womanhood and the most profligate, the finest churches, schools and universities, and the lowest dens of infamy and ignorance, hospitals and asylums for the physically distressed, and hovels where pain and suffering are the common lot of men. The conflict between these diametric elements for municipal control is constant and often bitter. The ascendency of one or the other is shown by the character of the local government and the power of those institutions which stand for the betterment of the people.

Chicago differs in no respect from other great cities, in fact it has some disadvantages not common to many American cities. It is at the "crossing of the ways" between the Atlantic and Pacific Coast cities, as well as between those on the Northern frontier and the Mexican Gulf. The result is that Chicago has a larger floating population with which to contend than any other city in the country. And yet the percentage of crime here is less than most of those municipalities of the same rank in this country. It is less, in proportion to population, in Chicago than in Baltimore, Boston, Buffalo, Cleveland, New York, New Orleans, Philadelphia, Pittsburg and a number of other important cities. These calculations are based on the number of crimes against persons and property (statutory offenses) omitting violations of city ordinances because there is no uniformity in municipal restrictions; acts being a violation of an ordinance in one city may not be such in another.

Whatever one may think of churches in general, there is no disputing the proposition that, both directly and indirectly, they constitute the strongest moral force in any community. Their influence bears not only upon the citizen as an individual, but also on the citizens collectively, as the chief instrument for securing good government, civic righteousness, or right mindedness, which is the only source of good government.

There are in Chicago ten nonpartisan organizations which have for their fundamental idea not only good government, but also the selection of candidates for official positions who command the respect of the voters for their honesty, abilities and character, and the high standing of the common council of the city furnishes abundant evidence of the effective work done by some of these organizations in maintaining the high reputation of our municipal legislative body. This is admitted in every city in the country. It is true a bad man will occasionally break into the council and retain for years his position, but of the 70 aldermen composing the Common Council of Chicago all the "gray wolves" can

be counted on a man's fingers. "Offenses will come but woe unto that man by whom they come" at the succeeding election.

Chicago is very greatly indebted to its churches and their influences in every department of its activities. When it is known that Chicago has 1,077 churches, the aggregate of effort exercised along moral, if not sectarian, lines can be well understood. If there be added to these the thirty-three church societies, such as clubs, ministerial and general organizations, which work outside of the church itself, we have a force for moral development of the community that is worthy of attention. The churches maintain about 20 hospitals which, in their appointments and capacity, rank with the best public institutions of similar character in the city or state.

Next to the moral influence as a factor in good government, although less direct, is the system of public schools, maintained by the city at an annual outlay of $11,857,551. To the citizen there are few things that are regarded as more important than the education facilities offered him for the schooling and training of his children. In fact few public utilities are more seriously considered by a person seeking a home than the educational advantages that are offered him. If he be an employer of labor the instruction of the children of his employees is of nearly as much importance to him as the training of his own.

The number of the public schools of the city is 267, with 6,296 teachers who are paid $6,538,239 for the school year, and who train 296,427 pupils. Beside a Normal College and three practice schools for the training of teachers, there are a Parental School, John Worthy School for truant boys, 16 high schools, 246 elementary schools, 3 manual training schools, besides 171 institutions in which manual training is taught, and 72 in which household arts are taught. These supply educational discipline for the children who come from homes of people who can spare them from other duties. But there is a very large class which requires the assistance of their children in the maintenance of the family. For such there are evening schools, open two hours for five evenings in each week, and continue for 18 weeks, and in these there are about 19,000 boys and girls. In addition to all this there are vacation schools, for five weeks in July and August, at which the attendance is about 6,000. Any child over 14 years of age is permitted to attend the evening schools and may graduate as from the high schools upon passing the required examinations. There may be cities which have a more comprehensive system of public instruction than Chicago, but if so, it is not recorded. In addition to these there are a large number of parochial schools and educational institutions, besides business, law and medical schools, which have 2,691 teachers and 94,538 pupils.

The result of these numerous public instrumentalities is that the last school census of Chicago, taken in 1908, shows that of the children under 21 and over 12 years of age in the city, the number of those who could neither read nor write, was 206, and the causes of such illiteracy were: Indigence, 46; ill health, 296; mental weakness, 59; mutes, 31; idiotic and insane, 24; other causes, 101. Since more than one-half of these children in the public schools are of foreign birth or parentage, this exhibit is surprising, as it indicates the avidity with which the offspring of our foreign population seize upon the educational advan-

tages offered them and also why it is that they are so readily and easily assimilated with the native population of the country.

One effect of the large number of institutions for primary education of the young is invariably to encourage the establishment and endowment of colleges and universities for a higher and broader academic training of students and such result has been most significant in this city.

While the public schools in their number, teaching force, pupils, etc., rank with the highest, in point of population, our higher institutions of learning place the city far in advance of any other city in the country, keeping in mind, of course, that Brooklyn, with a population of 1,589,250, is included in the statistics of New York, which has a population of 2,800,750.

The following table shows the number of colleges and universities in the cities named, with the number of students therein, the children of school age and the number of pupils in the public, private and night schools:

	C. & U.	Students.	Children of School Age.	Pupils in		
				Public Schools.	a Private Schools.	b Night Schools.
New York	* 6	15,619	1,474,427	727,710	94,482	120,290
Chicago	5	9,182	517,224	296,427	100,862	11,095
Philadelphia	3	7,620	e	174,136	e	10,889
St. Louis	3	2,628	195,966	87,170	30,000	13,334
Boston	d 3	6,624	111,450	112,133	16,563	21,409
Baltimore	3	1,140	e	80,235	25,000	8,928
Pittsburg	2	1,648	e	56,651	e	2,731
Cleveland	3	1,770	128,045	22,070	26,569	6,925
Buffalo	1	394	90,512	30,220	23,510	7,874
San Francisco	1	373	88,058	43,164	12,382	6,356
Detroit	1	266	100,675	55,032	20,013	4,478
Cincinnati	2	1,061	89,343	42,092	19,183	4,418
Milwaukee	2	1,122	112,066	40,008	23,810	5,004
New Orleans	3	2,020	c	34,058	25,000	2,131
Washington	7	4,010	55,885	53,385	e	3,654

* Excluding Brooklyn (with 4 Colleges and Universities.)
a Largely estimated. b Not in day schools. c Not separated.
d Includes Cambridge. e No data.

(In this table has not been included data from five colleges and universities, with 5,034 students, which are located in the suburbs of the city, outside of the city limits. With these included, Chicago would have 11 colleges and universities with 13,693 students.)

Unquestionably at the head of our higher institutions of learning is the University of Chicago, which was organized in 1892, and now has a corps of teachers numbering 319, with 6,360 students in attendance. The campus embraces 95 acres, which cost $4,217,000, and contains 31 buildings, arranged on the plan of the English universities. These buildings cost approximately $5,000,000, and several more are to be added, including the Harper Memorial Library building, which will cost $800,000. The University has a productive fund amounting to $15,070,903, and received, in 1908, from tuition benefactions and incidental charges, $1,899,755. The institution is co-educational, and in the vicinity

of the campus are a large number of homes of well-to-do people who have come to Chicago to give their children the advantages of the education furnished by the University, while in the various departments may be found students from nearly every state in the Union, as well as from a number of foreign countries.

For the student of natural history there is no institution in the world where such investigation can be carried on in a wider field or with a larger collection of subjects, than at the Field Columbian Museum in this city. This museum is an outgrowth of the World's Columbian Exposition, held in Chicago in 1893, and occupies the Fine Arts building at Jackson Park, a structure which for its size and classic beauty was one of the most admired structures at the Park. The building is Greek in style of architecture and covers nine acres of ground fronting the lagoon.

The institution was founded by Marshall Field, whose first donation to it was $1,000,000, which was followed by another of $430,000, which was augmented later by other donations amounting to $500,000. Upon the death of Mr. Field he gave the institution a further sum of $8,000,000 with which to erect a suitable building for the care of the exhibits, as the Fine Arts building was not erected with any idea of permanency and is fast falling into decay. When the new building is completed the city of Chicago has pledged $100,000 annually for its maintenance and the carrying forward of the purposes of the founder.

The Museum is divided into four distinct departments of Natural History, Anthropology, Botany, Geology and Zoology, specimens in each of which have been collected from every quarter of the globe, many of them being arranged in glass cases, for the convenience of sight-seers and students. Two courses of free lectures are given at the Museum each year by experts in the various departments of learning covered by its exhibits.

In the departments of Ethnology of North America, Mineralogy of the World and Botany, the museum is marvelously rich and without a rival. As to the number of specimens it is impossible to give an estimate, as they run into the millions. The museum has a library of more than 50,000 titles which are at the service of students and instructors from whatever country they may come, who are at all times admitted free of charge. The museum is open to sight-seers free on Saturdays and Sundays of each week but upon other days an admission fee of 25 cents is charged.

It is hardly necessary to go into full details regarding the special schools. The School of Art, at the Art Institute, is one of the most celebrated in the country. In addition to this there are six law schools, five theological seminaries, eight medical colleges, three dental colleges, two schools of pharmacy, two veterinary colleges, twenty-two business colleges besides other technical educational institutes.

Closely allied with institutions of learning, general and specific, are libraries and other facilities for gathering information.

There are in this city more than 100 libraries, of a more or less public nature, of which some 65 are, under various restrictions, open to the public. Some of them are open to the public without limitation, while others may be consulted by the observance of special rules gov-

erning the use of the books. These public and semi-public collections contain, in the aggregate, more than 1,463,000 bound volumes. There is no range of science, literature, art, history, etc., of which some of these collections do not make specialties.

This list does not include many specific collections, circulating (for which a fee is charged), club, seminary, law school, traveling, private school, settlement, hospital, Government department, railway, nor private libraries.

To the man with children to educate, from the kindergarten through any of the higher branches of study, including history, the arts, sciences or learned professions, there is no place, certainly on the American continent, where these branches are taught or studied with more success than in Chicago.

XII.

CHICAGO, AND ECONOMICAL LIVING

In another division of this volume some mention has been made as to the cost of living in this city, but it had reference only to its effect upon the price paid for labor.

While the statements made in that section hold good in all cases, with rich as well as those of moderate means, the sum paid for necessaries of life are not so important a factor with the former as with the latter class. It does not require an argument to prove that the nearer one is to the point of production, the less his necessities will cost him since about seventy per cent of the total cost of living is expended for transportation. The less the transportation, the less the cost to the consumer.

The well-to-do citizen, using a greater variety of products than his employee, and, possibly, either a better quality or a larger quantity, has, by his proximity to the point of production, an equal advantage with him in the lesser amount paid for transportation. He also gets the benefit of larger purchases, since a peck of potatoes costs more in proportion to quantity than a bushel.

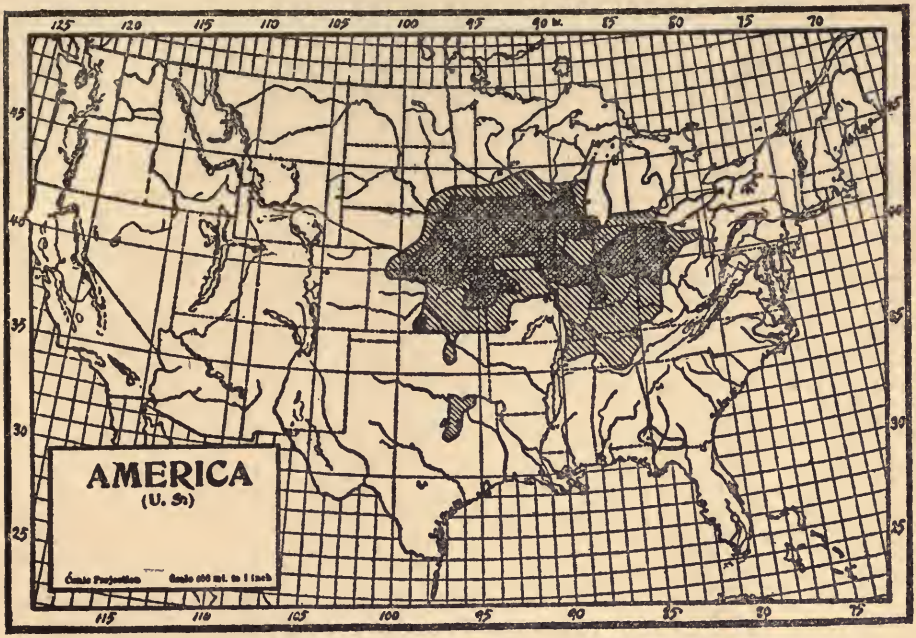
The proposition will not be disputed that the Middle West is the granary of the United States, if not the principal one of the world. This fact is demonstrated by the census reports of the Government which show that the Middle West has not only 57 per cent of the improved farms of the United States, but has also 58 per cent of the live stock and produces 49 per cent of the farm produce. So far as food products are concerned, that section has 56 per cent of the poultry, produces 54 per cent of the butter, 45 per cent of the cheese, 73 per cent of the corn, 67 per cent of the wheat, 52 per cent of the potatoes and 21 per cent of the orchard products of the country. Besides these, it furnishes practically all of the meat that is used in the country and more than half of the flour.

The following is a statement of the receipts of food products for the year 1909:

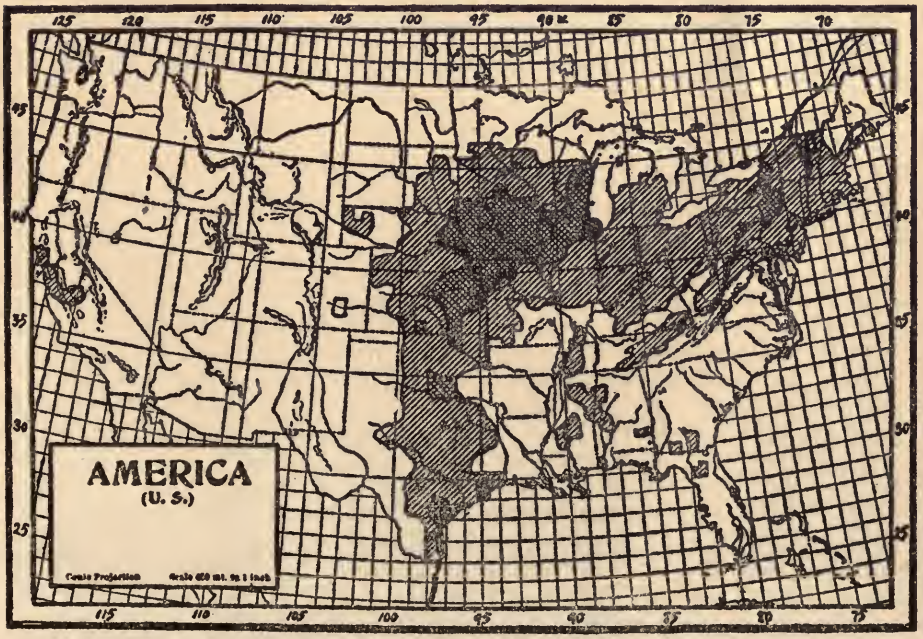
Flour (barrels)	8,526,207
Wheat (bushels)	26,985,112
Corn (bushels)	90,894,920
Oats (bushels)	87,884,238
Cured meats (pounds)	207,405,026
Dressed beef (pounds)	433,118,730
Lard (pounds)	70,852,783
Cheese (pounds)	84,473,211
Butter (pounds)	284,546,835
Potatoes (bushels)	12,662,864

This was not, of course, consumed wholly in Chicago, but it shows the almost unlimited supply of food products shipped and received in Chicago from which the local markets can easily be supplied.

Chicago has no markets for the sale of family food supplies that compare in plans and methods with those in many of our large American



FROM REPORT OF HARBOR COMMISSION. SWINE PRODUCING AREA OF THE UNITED STATES.



FROM REPORT OF HARBOR COMMISSION. CATTLE PRODUCING AREA OF THE UNITED STATES.

cities. First, because the resident population is so very widely scattered over a large area, and second, because vegetable products are largely vended by the owners of truck gardens which are located near the limits on three sides of the city. To some extent this variety of food is peddled on the street from wagons owned principally by foreigners, mostly Greeks.

There is, however, one market, or rather street, where fruits, vegetables, butter, eggs and the like are sold, which is one of the "show places" of the city and is fully as interesting and far more surprising, than the famous French Market of New Orleans. This is South Water Street, which lies along the main stream of the Chicago River and extends from Central Court to Lake Street, a distance of ten blocks, of which six are given up to the purposes of a market. Both sides of the street are lined with brick, or stone, buildings, which are occupied by 300 or more commission, jobbing and wholesale concerns, dealing in almost every variety of farm products, from veal to eggs, and in fruits of endless diversity, both domestic, foreign and tropical—magnificent pineapples, fourteen days from Honolulu; oranges from California and Florida, and bananas from Central America, with apples from Washington, Oregon and Michigan, and peaches and grapes from everywhere.

The sidewalks are filled so completely with boxes, crates, barrels and baskets that passers must go in single file and crowd in between the barrels to permit the passage of persons going in an opposite direction. Backed up to these walks are teams as thick as they can stand and it is not uncommon that between 18,000 and 20,000 teams, receiving or delivering purchases, have been counted in the street at the busy hours. As a rule the goods, in boxes, crates, baskets and barrels, are delivered to the consignee in the rear of his store and by him to the purchaser at the front, or street, entrance. In the middle of the street there is barely space for the passage of a single horse and wagon.

One item shows the immensity of the business done in this comparatively narrow and contracted space. Statistics show that the eggs alone handled in a year amount to 2,598,000 cases or 935,280,000 eggs, the total annual volume of this trade alone being $25,000,000 or $30,000,000. The apple business will reach 1,000,000 barrels, the California oranges 2,200 carloads, Florida oranges and grape fruit, 700 carloads of about 300 boxes to the car; bananas, 4,000 carloads of 450 branches each; potatoes from Colorado, Michigan and Wisconsin are mixed with barrels of grapes from Italy, tomatoes from Texas and strawberries from Tennessee.

With all the hurry, bustle and activity, a single individual, either man or woman, can make small purchases there as easily and expeditiously as in the country store.

The West Side market at Haymarket Square is an altogether different place. Provision is made for it by widening West Randolph Street between Jefferson and North Halsted Streets, so as to give ample space for farm wagons to occupy the middle of the street without interfering with the street car tracks. The market is uncovered and produce, garden truck almost exclusively, is sold from the wagons. In the forenoon the space is occupied by wagons which are usually emptied by noon when the owners return to their farms and gardens. Excellent vegetables like potatoes, onions, squash, beets, and the like, can be purchased here as reasonably as in the average country village. Another

market is about to be established in the northwestern quarter of the city, but it will be chiefly an exchange where city dealers can buy their truck for selling in their own stores in other quarters of the city.

In wearing apparel, Chicago is second to no market in the country. It is the largest place of traffic for fine shoes, for both men and women, most of which are made in the city. In fact it is the superlative excellence of this product that has built up for this city its large trade in such goods. There are no cheap shoes made in Chicago. In clothing there is no market in the country that excels the Chicago production either for quality or volume. To the laboring man it is important if he can save a couple of dollars on a suit of clothes, a dollar on his overcoat and fifty cents on a pair of shoes, for he purchases exactly what he requires; but it is of equal importance to a man who requires a finer and more dressy outfit if he can purchase precisely what he demands at a saving of from $10.00 to $25.00. In men's garments the value of manufactured goods made in this city in 1909 is estimated as follows: Clothing, $53,070,000, and the variety classed as tailors to the trade, $26,235,000.

In ladies' wear the advantages of Chicago's market is possibly more marked. In dry goods and millinery, Chicago holds a place second to no city on American soil, while its department stores are unequaled anywhere in their size, number or stocks. The manufactures of millinery goods during last year are estimated at $17,000,000 (not including wholesale trade) while the product of cloaks and furs very nearly equals it. It is not claimed that Chicago has lines of goods in any of these departments of trade that cannot be matched in any one of a dozen other cities of the country, but it is asserted that no city can rival our own in the lower prices at which such goods are retailed. The statement that Chicago is the largest open market in the country will hardly be questioned anywhere.

In household furniture this city is unequaled both as a market or a manufacturing center. Last year's estimates put the manufactures of these goods at $39,200,000, and the value of the wholesale trade at considerable of an advance. In discussing the subject of raw materials it was shown that Chicago holds the lead of all domestic lumber markets and this has an important bearing upon the cost of home building. With the abundance of lime, cement (most of which is produced here), brick and stone, the cost of building a home is from 20 to 35 per cent less than in most other cities, large or small, of the country.

The price of land for residences is regarded, especially by people from the East, as surprisingly low. Choice building lots in some of the most attractive residence sections of the city, provided with gas, electricity, water, sewers, paved streets and cement walks, within 20 or 30 minutes' ride by elevated road from the business center, or loop district, and located within two or three blocks of schools, churches, stores and markets, can be bought at from $50 to $100 per front foot.

Attractive homes can be rented in these localities at prices varying from $25.00 to $75.00 a month or at higher rates if one is disposed to expend something extra for a larger and more showy residence. Along the boulevards, or fronting the parks or in ultra fashionable quarters, he can accommodate the most plethoric pocketbook. But good homes, with every essential of refinement, comfort and convenience, can be secured either by purchase or rental at an extremely moderate outlay.

XIII.

CHICAGO, THE PLAN FOR A NEW CITY

Chicago is the result of necessity. Located on a marshy expanse of raw prairie, utterly without a thing of natural beauty, except the broad expanse of Lake Michigan on its eastern boundary, the problems that confronted the early settlers were not esthetic in character but wholly utilitarian. The rapid growth of the city both in population and business called for pioneers, not artists. The burning question that confronted the new arrival was a roof over the head of his family rather than parks and boulevards for its recreation. The saving grace of the city was the fact that the territory had been divided into rectangular sections of land, of 640 acres each, which were subdivided into blocks and lots, with defined streets and alleys. Despite the monotonous angularity that this gave the city, it avoided the difficulty of irregular and tortuous streets, which is so perplexing in most eastern cities. In a few instances, which are the very rare exceptions, diagonal streets are to be found in Chicago, like Milwaukee, Ogden, Blue Island, Cottage Grove, Colorado and other avenues, which followed the trails made by farmers, who brought their produce to the city across the prairies beyond the limits of platted streets.

The demand of the early settlers was for utilities, for bridges across the serpentine Chicago River, for passable roads, for sewers, for sidewalks, for places to live and in which to do business. The first postoffice, built of logs at the corner of State and South Water Streets, subserved the public demands as well, and possibly better, than our $4,000,000 postoffice does today. In those early days six letters a week was a heavy mail for the log postoffice to receive, when the eastern mail was brought by special courier once a month from Fort Wayne, and that from other sections of the country came by conveyance similarly crude. In 1831 the postal facilities were increased, the mail coming twice a week from Niles, Mich., and the office was in the residence of the postmaster.

Up to 1842, five years after the incorporation of the city, the people were dependent for water upon supplies obtained in barrels and buckets brought directly from the lake, which were carried about the city by peddlers who sold the contents by the quart or bucketfull, much as milk is vended today.

In 1847, ten years after incorporation, a petition was presented to the common council asking for a sidewalk on State Street south of Adams, and was not acted upon for some little time. The city, however, grew in population and volume of business, with such rapidity that it was impossible to so develop public improvements as to more than partially meet the pressing necessities of the people. It was often a question as to which of these public needs demanded earliest attention.

In private affairs shingles on the roof took precedence over paintings on the walls, and a "shack" to live in outranked a park for recreation. But the city persisted in growing regardless of the fact that the public authorities could not furnish the newcomers with anything like the com-

forts and conveniences they had abandoned to make homes in the frontier city. Utilitarianism overshadowed estheticism. The home, the store, the church, the school house, was built to meet immediate and dire necessities with little regard for embellishment or for the future.

But with growth came prosperity which exhibited itself not in adornment, but in the increase of the comforts of the people. Commodious homes took the place of the cottage and stores were enlarged to meet the demands of trade. Sidewalks were constructed and the streets were paved across miles of bog. This blazed the way for public recreation, and Lincoln Park, the precursor of the finest park system in the country, was laid out in 1864 and dedicated to the people, although a small plat of ground on the lake front had, in 1839, been set aside as a public park and christened Dearborn Park. Chicago has traveled the same road in the development of an esthetic taste among its people that all American cities have passed over, only she has done in a lifetime what has taken some American municipalities a century or more to attain.

Remembering that in 1833 Chicago was a frontier trading post, without a frame house on its site, and remembering also that when it had grown to a city of 300,000 population it was, in 1871, visited by the most disastrous and destructive conflagration of modern times, and further that since that date it has rebuilded itself and added to its population more than two million people, the record of her achievements, not alone along commercial and financial lines, but in all that adds to the beauty and grandeur of a modern metropolis, is almost inconceivable.

History repeats itself but it moves with more rapidity in some countries than in others. People of enlightenment and wealth, through travels in foreign lands, learned what others have accomplished and made the ideas of older populations their own and put them into use at home. In this way they came to appreciate the value of public utilities, conservation of health, improvement of homes, means of public recreation, beautification of streets and buildings and other facilities for the more rational enjoyment of a higher life.

The exquisite beauty of the "White City" in Jackson Park in 1893 was an object lesson for Chicago which was worth more than the $15,000,000 paid for it. The public spirited men of Chicago began to dream of a more beautiful metropolis of which "The White City," Paris and Berlin were the models. One of the guiding spirits in the new movement in that direction is Daniel H. Burnham, a distinguished architect of this city who won his laurels by designing some of the most artistic structures in San Francisco, Buffalo, Cleveland, Philadelphia, New York and Chicago, besides his masterly work as Chief Architect and Director of Works of the World's Columbian Exposition. He is chairman also of the commissions for beautifying Washington, D. C., and Cleveland, Ohio.

Mr. Burnham was ably seconded in his efforts to make the city of Chicago one of the most beautiful and artistic municipalities on the continent by the Chicago Commercial Club, which appointed a commission of twenty-eight of its members, who should have the subject in charge under the direction of Mr. Burnham, and of this commission Mr. Charles H. Wacker is chairman. As an evidence of the "I Will"

spirit and determination which is characteristic of Chicago and which has never suffered defeat, the mayor of the city has appointed a committee of 328 leading citizens of Chicago to represent the municipality in the project in which the whole people are vitally interested.

After three years of study and labor, Mr. Burnham and his assistant, Mr. Edward H. Bennett, presented their Plan of Chicago. Several important questions had to be considered in the formation of these details, not the least of which is that the city has already expended over $222,000,000 in permanent improvements and such an outlay must be considered in any scheme of beautification. But appropriations have been disbursed in a haphazard way, without any consideration of a unique plan for future expenditures. Then again, the center of population has very greatly changed within the last few decades, that point now being on the West Side, near the corner of Halsted and West Congress Streets. The park system of the city is now nearly perfect and it will require little readjustment other than the improvement of Grant Park on the lake front. This will cost little or nothing, as within the last six years 150 acres of that park have been made by filling in the lake with debris that would otherwise have been wasted. This refuse is ample to make from twenty-seven to thirty-five acres of park annually. Nor will the boulevard system require modifications other than extensions and the putting in of links between parkways already perfect in their plans and improvements.

Two questions of vital importance to the people are being tentatively discussed; first, how long will it take to complete the plans (described more fully herein) and second, what will the working out of these plans cost? Neither of these questions can be categorically answered.

It goes without saying that a work of this magnitude cannot be done in a year or five years. The working out of the plans of Baron Haussman for the beautification of Paris required a period of fifty years, while other European cities have consumed for the same work nearly as much time. While things move faster in Chicago than anywhere else, yet if all that is outlined can be completed in a generation, very satisfactory progress will have been made.

Of course the work must be done somewhat by piecemeal, or part-by-part. Widening streets like 12th, Halsted, Chicago Avenue, and others, will probably be undertaken first as the land to be sequestered for that purpose can be purchased at a less cost now than it could be a few years hence. Other features of the work will be, in a great measure, governed by the same conditions.

As to cost it is not the intention to burden the citizens with heavy taxation in carrying on the improvements. In other words it is not the purpose to do much more than to expend the money annually raised for permanent improvements along lines involved in the final completion of the plan. Heretofore public funds have been laid out with no regard to system, one piece of permanent work having little or no relation to another. In the future, if the plan meets public approval, as it is practically certain to do, all work, except to meet the necessities for immediate improvements, will be carried on with the ultimate end in view of a "Beautiful Chicago."

The status of public sentiment will either accelerate or retard the

execution of the plans of the commission and this, with the cost of the real estate that it will be necessary to take in the widening of streets and the cutting of diagonal thoroughfares, will be the dominant factors both as to the time required to complete the plan and the expenditure necessary for its execution.

In the October (1909) number of *The American City,* Mr. Charles H. Wacker, chairman of the plan commission and a member of the civic industrial committee of The Chicago Association of Commerce, assisted by Edward H. Bennett, had an article on "The Technical Features of the Plan of Chicago," which is given entire as a brief synopsis of what these plans involve and promise.

The first step in the work was a study of existing conditions, the general tendency or direction of the growth of the city, and the rate of increase of population. The line of growth was found to be towards the southwest from the site of the original Fort Dearborn, at the mouth of the Chicago River, that is to say, the centers of business and of density of population had been steadily displaced in this general direction.

In working out the Plan a great network of roads was found, surrounding the city, encircling and radiating from it and connecting it with the smaller towns, and the latter with each other; in fact, these already existing, but partly disconnected roads constitute 95 per cent of the proposed system of roadways.

The roads radiating from the city to the minor towns are extensions of the diagonal streets within the city, which latter exist in great number. It is proposed to extend these diagonal thoroughfares toward the center, or heart of the city, to develop their usefulness to the utmost, and by their extension and combination with existing rectangular streets, to create circuits around the heart of the city, the two elemental principles of street circulation being those of radial and circuit arteries. As a foundation to the system of arteries schemed, it is proposed to develop two basic lines or axial thoroughfares.

In regard to the streets, the intention has been firstly, to connect in a systematic manner the heart of the city with the surrounding districts, business and residential; and the basis for this is found in the diagonal streets already mentioned, radiating from the city center; secondly, to free the center of the city from congestion. It is proposed, therefore, first of all to widen and develop existing rectangular streets, enclosing this center, and secondly, to cut diagonal streets to facilitate still more the movement of traffic.

The circuit of first importance for immediate relief of the congestion in the heart of the city, and one that will be typical of all others to be executed as the city's growth demands, is Michigan Avenue, Twelfth Street, Halsted Street and Chicago Avenue.

(1) Michigan Avenue may be called the base line of traffic of the city. A great development of this avenue is proposed.

(2) Twelfth Street it is proposed to develop simultaneously with the Michigan Avenue extension (or north and south connecting boulevard), in order to bring the West Side people down to the shore of Lake Michigan and to Grant Park. This artery would be supplied with surface car lines, and on it might be established substations on all the trunk railroad lines coming into the city from this direction. These

substations would serve as a nucleus for the development of the great stations which it is proposed to establish, eventually, along this line.

(3) Halsted Street. This great business thoroughfare is so situated that its usefulness, already great, might be very much increased. It must inevitably carry an enormous traffic, and is selected as the north and south axial line of circulation.

(4) Chicago Avenue. This avenue, already 100 feet wide, will, if well maintained, serve for a long time the traffic which it will be made to carry. Connecting as it does with the proposed North and South Boulevard at Pine Street, it will form the fourth side of the rectangle, constituting the first circuit of improvement.

A great park system was found to exist, encircling the city on three sides, and along parts of the shore. This system it is proposed to extend and complete by the addition of park lands and parkways on all sides, including a complete development of the shore line, in order to provide adequately for the needs of the growing population. Numerous small parks also are proposed. While the smaller parks require to be artificially created, the larger forest areas proposed already exist and need only to be acquired and connected with the city to become at once a part of its life. On the north and west they run along the banks of rivers and through lovely meadows, and on the southwest through beautiful and undulating forest lands.

The shore of Lake Michigan is regarded as of first importance and has been studied in detail. Already the north shore is being developed in order to secure a complete line of public occupancy of the shore in the near future. Similar steps will be taken by the South Side, as the great need of the population of our city demands that the ownership of, and access to, the shore of the lake be restored to it.

While the two great elements of city planning—streets and parks—were first considered, it was found, on approaching the center of the city, that the great problem of transportation facilities had to be considered in connection with them. The location of existing passenger stations and freight yards and their possible distribution, has had great influence on the adjustment of the Plan, the aim being to develop railroads and streets simultaneously in such a manner that they may both operate perfectly without interference one with the other. This necessitates the alignment of the stations, now irregularly placed throughout the center, and the construction of a complete subway traction system, knitting all the lines into a perfectly working whole. At the same time, it is designed to facilitate, as much as possible, the removal of the freight yards from the center of the city, and to eliminate the needless and expensive rehandling of freight in the congested districts. The Plan proposes to locate great freight-clearing yards in the southwest part of the city, to be connected with the existing tunnel system under the central section of the city, and to construct a freight harbor at the mouth of the Calumet River, the whole to be connected by subway lines.

In addition to this general scheme, the Plan contemplates the creation of a center of administrative buildings, or Civic Center, on the West Side of the city at Halsted and West Congress Streets, and, in conjunction therewith, to develop in particular that portion of the park system front-

ing on the central business district, Grant Park, which has recently been filled in along the shore of Lake Michigan.

In order to create a new and splendid thoroughfare to the West Side, connecting this part of the city with the Civic Center and Grant Park, the widening and development of Congress Street is proposed. This street already exists in the broken form, and the cost of developing it would be less than that of widening any other street so near the center. Congress street would then become the east-and-west axial line, or the Grand Axis, on which line is also the dome of the Civic Center and Grant Park, with the proposed Field Museum, for the construction and endowment of which the late Marshall Field provided in his will $8,000,000. It is at the intersection of this axis with Halsted Street that it is designed to create a Civic Center. Many reasons govern this choice, but the chief one is that it is in the direct line with the growth of the city, and is naurally the focal point of the radial system proposed.

Grant Park has been considered with a view to making it the center of popular culture. It is intended to place here groups of buildings which will make it a splendid landscape garden, framing the view of the lake, and to develop the shore in such a manner that it will become an important feature of the city's life.

The Chicago Association of Commerce

77 JACKSON BOULEVARD

THE center of the industrial development of a country follows, very closely, the movement of its population. The same law governs trade and the routes of transportation. The advance of industry and population establishes financial institutions, colleges and universities and every facility for the education and refinement of the people. The point at which all these converge is a metropolis.

¶ The preceding pages show why Chicago has become the leading manufacturing point of the United States, the greatest railroad center in the world, the most important open market on the continent, the most conspicuous location for the assemblage of food products and raw materials in the country and one of the great financial cities of the world.

¶ If you contemplate the establishment of an industry, or a branch of one already in operation, the undersigned would be pleased to substantiate the foregoing assertions with facts and data for your information.

W. R. HUMPHREY,

Industrial Commissioner

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